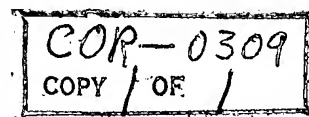


STAT



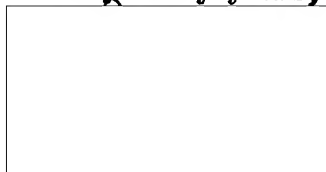
January 5, 1959

Dear Dan:

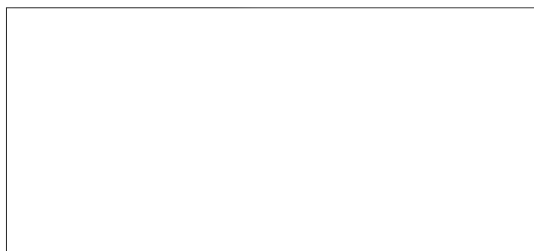
Enclosed is our subcontract for Philadelphia.

I would appreciate your early approval so that we may
send this to Philadelphia for signature.

Very truly yours,



Encl.



*RT-100 Subcontract
Folder - GE*

LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIVISION
Sunnyvale, California**PURCHASE ORDER**DATE **1/2/59** PAGE **1** OF **4** PURCHASE ORDER NUMBER **100-8**

DATE REQUIRED AT DESTINATION

See Paragraph entitled "Delivery"

As required

General Electric Company
3198 Chestnut Street
Philadelphia 4, Pa.MODEL WORK ORDER REF. **2-1001** REQUEST NO. **B 1085**CONTRACT
Government Contract

PREFERENCE RATING

F. O. B.
Philadelphia, Pa.

SHIPPING POINT

VIA **Air-Ex or as specified****SHIP TO:** LOCKHEED AIRCRAFT CORPORATION

DELIVER TO

ACCOUNT OR W. O. CHARGE

TERMS

See Paragraphs 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 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2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 211

LOCKHEED AIRCRAFT CORPORATION**MISSILE SYSTEMS DIVISION**

Sunnyvale, California

PURCHASE ORDER

DATE

1/2/59

PAGE

2

OF

4

NUMBER

100-8

REQUEST NO. 1085

General Electric Company
3198 Chestnut Street
Philadelphia 4, Pa.

ITEM	QUANTITY	UNIT	DESCRIPTION	PRICE
			<u>Reports</u>	
			1. An informal monthly progress report, similar to an ozalid-type reproduction, shall be submitted on or before the 15th of each calendar month, reporting on the progress during the preceding calendar month.	
			2. A brief, informal monthly management report shall be submitted on or before the 15th of each calendar month, giving fund status including monthly expenditures.	
			<u>DELIVERY:</u>	
			Re-entry capsules shall be delivered in accordance with the following schedule:	
			<u>USE NO.</u>	<u>DELIVERY DATE:</u>
			101	January 9, 1959
			102	February 6, 1959
			103	February 6, 1959
			104	March 6, 1959
			105	March 6, 1959
			106	March 21, 1959
			107	April 11, 1959
			108	April 25, 1959
			109	May 23, 1959
			110	May 30, 1959
			111	June 27, 1959
			112	July 4, 1959
			113	July 18, 1959
			114	August 4, 1959
			<u>Reports</u>	
			As indicated in Work Statement.	
			<u>CONTRACTOR FURNISHED MATERIAL:</u>	
			Lockheed Aircraft Corporation, Missile Systems Division, shall supply, or cause to be supplied, nineteen (19) cassettes to General Electric for performance hereunder.	
			<u>SHIPPING, PACKING & CRATING:</u>	
			All shipments shall be packed and crated in accordance with applicable specifications	

LOCKHEED AIRCRAFT CORPORATION**MISSILE SYSTEMS DIVISION**

Sunnyvale, California

PURCHASE ORDER

DATE

1/2/59

PAGE

3

OF

4

NUMBER

100-8

REQUEST NO.

B-1085

General Electric Company
3198 Chestnut Street
Philadelphia 4, Pa.

ITEM	QUANTITY	UNIT	DESCRIPTION	PRICE						
TAT			<p>for the protection of delicate instrumentation in transit or in accordance with all carriers' tariffs. General Electric shall be responsible for the delivery of all shipments to the carriers' docks and forward them collect via bonded air freight, or as otherwise directed, to the address to be supplied by</p> <p><u>FUNDS AUTHORIZED:</u></p> <p>The total anticipated cost for the performance of the Work Statement hereunder is as follows:</p> <table><tr><td>Total Estimated Cost</td><td>\$3,641,300.00*</td></tr><tr><td>Fixed Fee</td><td><u>267,500.00</u></td></tr><tr><td>Total Cost</td><td><u>\$3,908,800.00</u></td></tr></table> <p>*-Plant arrangement in an amount not to exceed \$10,000.00 for the provision of special security procedures inherent in the performance of this task is included herein as allowable charges under this contract.</p> <p><u>CORRESPONDENCE:</u></p> <p>All correspondence, including reports, invoices, bills of material, etc., which is transmitted via U. S. Government mail shall be addressed to Palo Alto, California. All reports and contractual correspondence or documents, however, shall be directed to the attention of James R. Lynch on contents or on an inner envelope.</p> <p><u>SUPERSESION OF LETTER SUBCONTRACT:</u></p> <p>This definitive contract supersedes and cancels in its entirety the letter subcontract of intent, dated April 29, 1958, as subsequently amended. All costs which have been incurred under the letter subcontract of intent in anticipation of this definitized contract, and which costs would have been considered allowable subsequent to the issuance hereof, shall be considered allowable hereunder, subject to the final acceptance by the Contracting Officer as allowable costs.</p> <p><u>OVERTIME:</u></p> <p>Authorization is hereby given for the use of overtime up to and including 25% of direct labor charges in performance of work hereunder as necessary to maintain the required delivery schedule. It is mandatory, however, that an advance estimate of</p>	Total Estimated Cost	\$3,641,300.00*	Fixed Fee	<u>267,500.00</u>	Total Cost	<u>\$3,908,800.00</u>	
Total Estimated Cost	\$3,641,300.00*									
Fixed Fee	<u>267,500.00</u>									
Total Cost	<u>\$3,908,800.00</u>									

LOCKHEED AIRCRAFT CORPORATION**MISSILE SYSTEMS DIVISION**

Sunnyvale, California

PURCHASE ORDERDATE **1/2/59**PAGE **4**OF **4**

NUMBER

100-8REQUEST NO. **1085**

General Electric Company
3198 Chestnut Street
Philadelphia 4, Pa.

ITEM	QUANTITY	UNIT	DESCRIPTION	PRICE
STAT			<p>anticipated overtime in any given month be supplied to through the correspondence channels indicated above at least one week in advance of the calendar month for which the estimate is prepared.</p> <p><u>PROHIBITION AGAINST ASSIGNMENT:</u></p> <p>Notwithstanding any other provisions of this subcontract, the Contractor shall not transfer, pledge or otherwise assign this contract, or any interest therein or any claim arising hereunder to any party or parties, bank, trust company or other financing institution, without first receiving the written authorization of Lockheed Aircraft Corp.</p> <p><u>SPECIAL SECURITY RESTRICTIONS:</u></p> <p>The Contractor shall not reveal (1) the specific nature or any details of the work being performed hereunder or (11) any information whatsoever with respect to the department of the Government sponsoring this contract and the work thereunder except as the Contractor is directed or permitted to reveal such information by Lockheed and/or the Contracting Officer or by his duly authorized representative for security matters, and notwithstanding any clause or section of this contract to the contrary, the Contractor shall not interpret any clause or section of this contract as requiring or permitting divulgence of such information to any person, public or private, or to any officer or department of the Government without the express consent of the Contracting Officer or his duly authorized representative for security matters.</p> <p><u>COMMUNICATION WITH CONTRACTING OFFICER:</u></p> <p>In all instances within the schedule or terms and conditions of this contract where Contractor is required to contact, communicate with, or direct documents, reports, invoices, etc., to or through the Contracting Officer, Contractor is hereby directed to refer all such matters in connection therewith to Lockheed, attention James R. Lynch, for disposition instructions or forwarding to the Contracting Officer, if required, with the exception of those matters dealing with the maintenance of proper security. Under no condition is Contractor to contact Contracting Officer or his duly appointed representative(s) other than on matters of security without the prior approval of Lockheed.</p> <p><u>TERMS AND CONDITIONS:</u></p> <p>The terms and conditions attached hereto and made a part hereof are applicable to this purchase order, superseding and cancelling those terms and conditions on the reverse side of Page 1 of this purchase order. Article 33, entitled "Renegotiation," is deleted in its entirety and is not applicable hereunder. If any conflict exists or is determined to exist between the contents of any paragraph or sentences delineated on the face of this purchase order and the terms and conditions attached hereto, those typed on the face of this purchase order shall override.</p>	

SP-128 - C
Revision #1
3 Oct. 1958

**COVERT
WORK STATEMENT**

Development of a Reconnaissance Satellite Recovery Vehicle

1. Scope:

The work shall consist of the design, development, manufacture and test of a Reconnaissance Recovery vehicle for the covert (black) program. The basic recovery vehicle which includes the outer shell, re-entry propulsion, spin devices, separation hardware and recovery aids shall be completely compatible with both the black and white payloads.

The recovery vehicle shall be capable of returning a film cassette hereinafter referred to as payload from the WS117L vehicle on orbit to a designated recovery area on the earth's surface. Recovery aids shall be provided to enable air snatch recovery with backup recovery from the ocean surface.

2. Applicable Specifications and Other Publications:

- 2.1 LMSD 2916 - General Environmental Specifications for the WS117L Equipment - Program IIA with deviations as agreed to between LMSD and the subcontractor.
- 2.2 LMSD 2950B - Design Control Specification for the Bio-Medical Recovery Capsule.
- 2.3 LMSD 6020C - Statement of Work Bio-Medical Recovery Capsule

3. Requirements:

- 3.1 Detailed requirements for the development of the equipment required for this reconnaissance recovery task are covered by LMSD 6020C, referenced above, with the addition of the adaptation required for carrying either the reconnaissance payload of the Bio-Medical Recovery Capsule.

The development and testing, except the Mark I Program, will be borne by the Black Program.

- 3.2 The cassette and its associated "take up" hardware will be furnished to the General Electric Co. Design specifications and detailed qualification tests for the cassette will be established by G.E. and submitted to LMSD for incorporation with the camera system specifications.

X

3.3 Security:

Special security measures will be required throughout the program. The subcontractor will provide such special security measures within his own facilities as may be required to conform with the INSD security plan.

4. Manufacture and Delivery:

4.1 Test Units:

Necessary test units will be provided to perform the drop tests and systems tests required to prove design and qualify the system.

4.2 Mockup:

The following mockup equipment will be required in addition to that required by the Bio-Medical experiment.

4.2.1 A Space Utilization - Weight and Balance Mockup: Simulating accurately the external surface of the (UDMH) recovery system. Dimensional requirements are ± 0.020 inch on critical surfaces and ± 0.10 inch on non-critical surfaces. Electrical and mechanical interface with the WS117L structure shall be accurately represented. The total weight and C.G. shall be represented to ± 5 pounds, ± 0.1 inch respectively,

4.3 Design Models:

Two design models as described herein shall be provided per the attached schedule.

4.3.1 The experimental model shall contain all circuitry and sequence devices, electrical and mechanical, but not necessarily in the position or condition of final design. In addition to the purpose specified in MIL Specification 8189, this model is to determine the functional capability of the assembled system.

4.3.2 The developmental model shall contain all circuitry and sequence devices, electrical and mechanical, in near final form and position. In addition to the purpose specified in MIL Specification 8189, this model shall be completely functional to the extent of proving the operational capabilities of the system.

4.4 Flight Units:

Fourteen (14) reconnaissance recovery units will be provided by G.E. under this work statement plus the requisite mockups and design models as specified in the following paragraphs. Delivery of these articles will be in accordance with the attached master schedule.

4.4.1 Production Tests:

- 4.4.1.1 Acceptance Tests: Following fabrication completion of each flight unit, subcontractor shall conduct acceptance tests in accordance with approved procedures which will demonstrate readiness for flight use.

The contractor shall develop acceptance test specification and acceptance test procedures which shall demonstrate compliance of the completed subsystem with this work statement.

- 4.4.1.2 Preflight Checkout: G.E. will participate in such checkout operations only to the point of providing an experienced engineer in the early phases of the program and training of the black operations crew.

4.5 Spares:

The spares concept for this program shall be that of providing readily replaceable components or sub-assemblies.

In addition to the spare units indicated on the attached schedule, sufficient component and sub-assembly spares shall be provided for all long-lead-time components to insure meeting the flight schedule in case of unit malfunction. The spares indicated on the attached schedule shall be modified as necessary between flights so as to be in conformance with current design status at any given time. The subcontractor shall provide LMSD with a spares provisioning list for the reconnaissance system as soon as practicable.

5. Ground Support Equipment:

- 5.1 Fabricate and provide all special assembly and maintenance tools, ground handling equipment, and checkout equipment per the attached schedule. Provide the ground support equipment listed in Table I.

- 5.2 Assembly, test, handling and maintenance manuals shall be provided with each set of equipment. Simple reproduction methods will be adequate such as typewritten copy and ozalid prints.

6. Reports:

The subcontractor shall submit a monthly progress report on or before the fifteenth of each month. This report shall include a technical summary, not to exceed two pages, budget chart showing actual costs vs estimated costs and schedule status.

TABLE I
GROUND SUPPORT EQUIPMENT

<u>Item</u>	<u>Quantity</u>
1. R/V Checkout Unit	3
2. R/V Simulator	3
3. Beacon Test	3
4. Rocket Sling	1
5. Rocket Stand	1
6. Shipping Containers & Handl. Fixture	6
7. Dummy Rockets	4

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SYSTEMS REQUIREMENT SPECIFICATION
for the
ADVANCED RECOVERY VEHICLE
and
ASSOCIATED GROUND SUPPORT EQUIPMENT

Approval _____

SYSTEMS REQUIREMENTS SPECIFICATION
for the
BIOMEDICAL RECOVERY CAPSULE
and
ASSOCIATED GROUND SUPPORT EQUIPMENT

1.0 SCOPE

1.1 This specification defines the development and performance requirements of the Advanced Recovery Vehicle (ARV) and its associated ground support equipment intended for use with the WS-117L vehicle system covert program.

1.2 Mission - The mission of the Advanced Recovery Capsule in the ARV shall be to return a reconnaissance film cassette, hereinafter referred to as payload, from the WS-117L vehicle, on orbit to the prescribed recovery area on the earth's surface.

2.0 APPLICABLE DOCUMENTS

2.1 The following specifications, other publications, and drawing of the issue specified herein shall form a part of this specification to the extent specified.

SpecificationsMilitary

MIL-Q-5923C(USAF)
15 March 1956

Quality Control Requirements, General

MIL-I-6181B
29 May 1953

Interference Limits, Tests and Design Requirements, Aircraft Electrical and Electronic Equipment

MIL-E-7729A(1)
28 February 1956

Enamel, Gloss, Aircraft Application

MIL-M-8090A (ASG)
29 February 1956

Mobility Requirements, Ground Support Equipment, General Specifications for

MIL-W-8160B
19 July 1957

Wiring, Guided Missile, Installation of

MIL-E-8189A (ASG) (1)
16 April 1957

Electronic Equipment, Guided Missiles
General Specifications for

MIL-A-8421A (USAF)
6 November 1958

Air Transportability Requirements, General
Specification for

MIL-S-8512B
8 January 1958

Support Equipment, Aeronautical, Specification for the design of

MIL-E-25366A
28 June 1957

Electric and Electronic Equipment, and
Systems, Guided Missiles, Installation of
General Specification for

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Lockheed Aircraft Corporation

LMSD-2916
24 March 1958
Rev. 30 April 1958

General Environmental Specification

Other Publications

Federal Standard

FED-STD-595
1 March 1956

Colors

Military Standards

MIL-STD-129B
10 April 1957

Marking for Shipment and Storage

MIL-STD-130
4 March 1953

Identification and Marking of U.S. Military Property

MS-33586
14 December 1956

Definition of Dissimilar Metals

Bulletins

USAF

Bulletin 23
31 October 1957

Materials and Processes

Air Force-Navy Aeronautical

143d
19 August 1954

Specifications and Standards, Use of

Department of Air Force, Navy and Commerce

ANC-5
March 1955

Strength of Metal aircraft Elements

2.2 Unless otherwise specified, the following contractor-prepared specifications and drawings as revised or amended shall form a part of this specification to the extent specified.

Specifications

NCS-1137
NCS-1143

Reliability Test Data Accumulation
Reliability Failure Reporting

Drawings

13A535A
10 November 1958

SAW Envelope and Mechanical Interface

SK 59000-14 Rev. A
16 December 1958

Electrical Interface ARV

2.3 Unless otherwise specified, the following customer and co-contractor prepared specification and or dwgs. shall form part of this specification to the extent specified.

Fairchild

956L21 Rev. F
18 August 1958

Cassette Outline

LMSD 1062067A

Nose Cap Assembly

LMSD 1156A

Layout Capsule Interface.

3.0 REQUIREMENTS

3.1 Description - The ARV shall consist of the basic recovery vehicle (recovery capsule), the reentry forebody and structure, orbit ejection and propulsion control sub-system, separation hardware and recovery equipment.

External appearance between the completely assembled ARV and the completely assembled BRG shall be essentially the same. Mounting and environmental conditions shall be provided to return the payload to a designated portion of the earth's surface. Recovery equipment and tracking aids shall be provided to enable air snatch recovery of the basic recovery vehicle over ocean areas. In addition, recovery aids shall be provided for back up recovery capability for water recovery.

Interface wiring between the GFE components, used in the ARV, and the WS-117L vehicle shall be provided. The requirements applicable for ground support equipment are as specified in paragraph .

3.2 General

3.2.1 Materials and Processes - Materials and processes, where applicable, shall conform to specification of the U.S. Air Force Specification Bulletin #23, and Air Force-Navy Aeronautics Bulletin ANC-5. Wherever possible, economical and non-critical materials shall be utilized in keeping with the expendability and State of the Art requirements for recovery vehicles.

3.2.2 Metals - Metals shall be of the corrosion-resistant type or shall be suitably protected to resist corrosion and electrolytic action during use.

3.2.3 Standard Parts - Specifications and standards for all materials, parts, and Government certification approval of processes and equipment which are not specifically designated herein and which are necessary for the execution of this specification, shall be selected in accordance with ANA Bulletin #143, except as specified in Paragraph 3.2.3.1.

3.2.3.1 AN or MIL Standard Parts - AN or MIL Standard Parts shall be used wherever they are suitable for the purpose, and shall be identified on the drawing by their part numbers. Commercial utility parts such as screws, nuts, cotter pins,

bolts, etc., may be used, provided they possess suitable properties and are replaceable by the AN or MIL Standard Parts without alteration, and provided the corresponding standard part numbers are referenced in the parts list, and if practicable, on the contractors drawings. In applications for which there is no AN or MIL standard part, commercial parts may be used provided they conform to all the requirements of this specification.

3.2.4 Dissimilar Metals - Dissimilar metals shall not be used in intimate contact unless suitably protected against electrolytic corrosion. When it is necessary that any combination of such dissimilar metals be assembled, an interposing material compatible to each shall be used. Dissimilar metals shall be as defined in Standard MS-33586.

3.2.5 Electronic Equipment Design - The design of all electronic equipment shall conform to the requirements of the experimental phase as set forth in Paragraph 3.1 of Specification MIL-E-8189A (ASG).

3.2.6 Installation of Electrical and Electronic Equipment - The installation of electrical and electronic equipment shall conform to the requirements of specification MIL-E-25366.

3.2.7 Wiring - Wiring shall be in accordance with the requirements of Specification MIL-W-8160.

3.2.8 Interference Limits - Interference Limits for installed equipment shall be in accordance with the requirements of Specification MIL-I-6181.

3.3 Weight - The total weight of the ARV shall not exceed 279 pounds. Every effort shall be made during the design and development phases of this program to provide minimum weight for the required mission. The weight breakdown shall approximate that shown in the following table.

A. Propulsion Subsystem	75 lb
B. Heat Shield	88 lb
C. Recovery Body	59 lb
D. Recovery Payload & Container	57 lb
(40 lb payload)	
TOTAL	279 lb

3.4 Identification and Marking - Identification and marking of recovery vehicles and components shall be in accordance with the requirements of Standard MIL-STD-130. External markings for the ARV shall be located in accordance with the applicable Lockheed Missile Systems Division drawing. No external identification markings shall be visible.

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3.5 Interchangeability - All articles having the same manufacturer's part number shall be directly and completely interchangeable with respect to installation and performance.

3.6 Design and Construction

3.6.1 Mechanical Configuration - The design of the capsule shall be within the dimensional limitations set forth in General Electric Drawing 133-B-535. To accomplish and maintain proper interface requirements of the capsule with the WS-117 vehicle airframe all configuration changes shall be subject to approval of INSD.

3.6.2 Electrical Configuration - The capsule electrical system shall include the necessary power supplies, power distribution system, instrumentation, power transfer switch, and provisions for recovery aids in the form of radio beacons and beacon light.

3.6.2.1 The electrical system interface shall be accomplished through the electrical connector explosive disconnect which shall be similar to that indicated on G.E. drawing 887C232. Connector pin assignments will be in accordance with G.E. drawing SK 59000-14.

3.6.2.2 Power Ground and Cabling - The following requirements shall be adhered to for the ground requirements for the ARV.

- a. No ground signals shall be returned to the missile airframe.
- b. Wire shields for return signal circuits shall be avoided wherever possible.
- c. All shields where utilized, shall be isolated from each other in cable runs.

3.6.3 Finish - The ARV shall incorporate finish coatings compatible with environmental requirements.

3.6.4 Alignment - The c.g. of the capsule is intended for insulation on the longitudinal axis of a WS-117 vehicle. Adequate means shall be provided for aligning the c.g. of the capsule with the retrograde rocket thrust axis.

3.6.5 Reliability - Reliability as specified herein shall be the probability of success of the ARV to perform satisfactorily for the time required and in the environments encountered in the accomplishment of a specified mission. The program to achieve reliability shall consist of the following phases.

- a. **Reliability Attainment** - An optimum design phase that will assure the development of a basic design having a high reliability potential.
- b. **Reliability Measurement** - A test program that provides maximum information relative to the functional capability of the design to perform under its expected environment.

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- c. Reliability Maintenance - A thorough checkout program that provides maximum assurance throughout the program, that each ARV is capable of meeting the operational objectives.

3.6.5.1 Data Accumulation - The accumulation of data for reliability shall be in accordance with G.E. Specification NCS-1137.

3.6.5.2 Failure Reporting - The method of reporting failures for reliability should be in accordance with the requirements of G.E. Specification NCS-1143.

3.6.6 Storage Life - The recovery vehicle excluding the batteries and life cell, shall be capable of being operated satisfactorily after storage for a period of one year.

3.6.7 Government Furnished Equipment

3.6.7.1 General - This equipment shall consist of a cassette housing assembly, including a take-up reel and drive motor, and dummy exposed film. G.E. shall receive as GFE, sufficient cassettes to meet customer and in house testing requirements. Sixteen qualified cassettes (14 for flight requirements and 2 for G.E. qualification tests), and six unqualified cassettes (for drop tests) will be required. In order to meet system balancing requirements sufficient quantities of exposed payload for full load conditions, shall be provided to G.E. as GFE. If this cannot be fully accomplished, a winding and unwinding device shall be loaned to G.E. so that a limited quantity (at least two full loads) of exposed payload may be versed in the program.

3.6.7.2 Technical Requirements - At the time of ejection the cassette shall contain a full forty (40) pound payload. The physical characteristics shall not exceed those called for in Fairchild drawing 956L21 Rev. F. dated 8/18/58. A summary of these is as follows:

Weight - Film - Full load shall not exceed 40 pounds

Size - Height \pm 21 inches \pm 0 - 1/2"

Width \pm 4' 3/16" at the hub

\pm 4 3/4" everywhere else

Length \pm 22.5"

3.6.7.3 Mechanical Agreement - G.E. will support the GFE structure through the hub. The GFE cassette assembly, as furnished, will be capable of withstanding all system loads.

3.6.7.4 Mechanical Provisions for Cassette Housing Alignment - G.E. shall provide adjustments such that the cassette housing assembly and the cassette entrance spool shall be aligned with respect to the thrust cone interface plane. G.E. will align the cassette entrance spool with respect to the thrust cone interface plane.

By adjustment of the cassette housing assembly alignment to within ± 0.1 of an angular degree shall be obtained in the XY and XZ planes. This adjustment shall be accomplished at the time of final in house assembly. If the ARV is disassembled in the field, provisions should be made by the cognizant field personnel to utilize the same type alignment fixtures as were used by G.E. assembly personnel.

3.6.7.5 Structural Interference - G.E. design shall be such that there will be no interference in the film path. This design concept is predicated upon the fact that proper tension is excited in the camera/cassette units.

3.6.7.6 Film Cutting and Water Seal System - G.E. shall design and provide a film cutting and water seal system. At the time of final assembly, at G.E., means shall be provided to physically hide the cutter assembly from external viewing. This camouflage effect will be provided by utilizing a false cooling line adapter. A transfer signal will be received by the ARV programmer from the final stage of the WS-117L system which will initiate the cutting system. Light and water seal protection shall be incorporated as part of the cutting system. As soon as the film is cut a light/water seal will be provided between the opening on the cutter assembly and the internal cavity of the recovery vehicle.

3.6.7.7 Film Sensitivity Protection - G.E. will design the overall ARV system for light sealing protection for the payload. In addition to the cutter seal, the internal surface of the recovery vehicle will be painted a non-reflective black. At the mechanical interface between the ARV and the WS-117L vehicle, G.E. will provide a flat mounting surface. This surface will be flat within an accuracy of ± 0.005 inches.

As part of final systems and acceptance testing on flight units G.E. will have a test record indicating that no light is entering the internal cavity.

3.6.7.8 Internal Temperature Requirements - G.E. will provide internal temperature control by painting the exterior shield with paint having an emissivity absorptivity ratio of 1.0.

3.7 Performance

3.7.1 Functional Performance - The recovery vehicle shall be designed to function within the limits of the WS-117 vehicle performance factors defined herein.

3.7.1.1 Pre-launch Monitoring - Provisions shall be made for monitoring of the recovery vehicle system environment, through the WS-117 ground monitor system.

3.7.1.2 Vehicle Exit Trajectory - Vehicle exit trajectory time and deceleration conditions shall be as set forth in Figure 1.

3.7.1.3 Vehicle Orbit Trajectory - The WS-117 vehicle will operate on a nominal 1-1/2 hour polar orbit at an altitude of 140 ± 24 statute miles (apogee to perigee). Launching shall be in a southerly direction occurring within 3 hours of twelve o'clock noon.

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3.7.1.4 Vehicle Attitude - The WS-117 vehicle shall be stabilized with the longitudinal axis in the vehicle orbital velocity vector, with an accuracy of $\pm 10^\circ$.

3.7.1.5 Flight Plan - The WS-117 vehicle shall maintain the attitude set forth in Paragraph 3.7.1.4 until just prior to re-entry phase. The vehicle will then be programmed to provide a retro angle of 120° (measured from the true horizontal). This retro angle shall be maintained to within $\pm 2^\circ$ for the Mark 2 System. The azimuth deviation in the ejection attitude will be $\pm 5^\circ$. The pitch and yaw rates in the ejection attitude will be random in nature with three sigma values of about 60° per minute maximum. The integrated ARV ejection velocity vector during the powered phase of ejection shall not vary by more than $\pm 10^\circ$ from the WS-117 axis (this is in addition to the $\pm 5^\circ$ tolerance of the WS-117 orientation). Re-entry capsule ejection shall be initiated by programmed ground command as the vehicle passes over a predetermined ground communication station. The re-entry trajectory shall be such that landing will be in the selected zone within an area not greater than 150 statute miles wide and 300 statute miles long. The recovery system (refer to Paragraph 3.7.8), shall provide day or night recovery over ocean or land areas. Ejection velocity of the recovery vehicle shall be 1,300 feet per second (Nominal).

3.7.1.6 Recovery Vehicle/WS-117 Vehicle Separation - LMSD shall furnish for separation, four ejection springs and synchronized latching pin pullers. The simultaneity of the pin pullers shall be 6 milliseconds (± 3 milliseconds on a 15 millisecond time interval). The pin shall be pulled at $T = 1.5$ seconds (See Paragraph 3.6.2.1).

3.7.2 Power Requirements - Power requirements from the WS-117 electrical system shall be available as follows:

- a. 28 volt unregulated, 22 to 29.5 volts.
- b. 28 volt dc $\pm 2\%$, 0.25% ripple peak-to-peak.

Preference in the use of power form shall be in accordance with the sequence of the above listing.

3.7.3.1 Power Consumption - Powered Flight and Orbital ARV consumption of WS-117 supplied power will be as follows: 28 volt dc regulated voltage will be used in the ARV. The duty cycle will be 10% maximum per orbit. The drive motor and sensor characteristics are not defined as of this time.

3.7.3.2 Separation Signal Requirements - The following pulse signals shall be programmed by the WS-117 vehicle to the ARV.

- a. $T = 82$ Arm Signal + 28 volts, dc, non-regulated, 8.0 amps, 50 milliseconds.
- b. $T = 82$ Transfer Signal + 28 volts, dc, non-regulated 30.0 amps, 50 milliseconds.
- c. $T = 1.5$ mechanical release of ARV by WS-117 vehicle.

Driving voltages for items "a" and "b" should be applied for a minimum of 0.9 second. The values indicated are anticipated.

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3.7.3.2 Squibs and Other pyrotechnic Devices - The electrical properties for squibs and other pyrotechnic devices shall be as listed herein. However, the design effort shall continue towards making them compatible with the WS-117.

Spin and Despin Rockets and Explosive Bolts	0.2 amp/bridge for 5 minutes, $1 \pm .25$ ohm/bridge, 2 bridge wires per unit
Retro Rocket	45 amp/bridge for 2 minutes, 0.7 ± 0.25 ohm/bridge, two squibs in parallel.
Thermal Relay	0.5 amp continuous, $1.35 \pm .15$ ohms
Explosive Disconnect Cell	Maximum no fire current - 0.5 amp, Minimum all fire current -2.0 amp, Bridge Resistance - 1.2 ohms
Ejection Piston	Maximum no fire current - 0.5 amp, Minimum all fire current -2.0 amp, Bridge Resistance - 1.0 ohms - $\pm .2$ ohm
Pyrotechnic Switches	Maximum no fire current - 0.020 amp - Test 0.1 amp Minimum All fire current -0.3 amp Bridge resistance - 1.6 ohms
Dimple Meter	Maximum no fire current - 0.5 amp Minimum all fire current - 2.0 amp Bridge resistance - .5 ohm $\pm .3$ ohm
Thermal Batteries	Maximum no fire current - 0.200 amp Minimum all fire current - 2.0 amp Bridge resistance - 0.65 ohm
Piston Harness Cutter (Reefing Line Cutter)	Maximum no fire current - 0.5 amp Minimum all fire current - 2.0 amp Bridge resistance - 1.0 $\pm 25\%$ ohms
Reefing Line Cutter	Mechanical Actuation

3.7.3.3 Pyrotechnic Shorting Precaution - The following pyrotechnics must be shorted prior to pre-mating. This shall be done in such a manner that shorting may be conveniently removed at mating, as with plugs, and the required fuzing and/or firing circuit connections are made.

- a. Retro Rocket igniter.
- b. Spin and de-spin rocket igniter.
- c. Explosive bolt squibs
- d. Separation explosive piston squibs (both external and internal).

3.7.4 Recovery RF Beacon Frequencies - The recovery beacon shall be adjustable for the following frequencies.

231.4 Megacycles
232.4 Megacycles
235.0 Megacycles
237.8 Megacycles

3.7.5 Re-entry Initiation - Ejection shall be initiated by timer setting on command through the WS-117 command transponder system and shall provide the capsule with a 28-volt de low-impedance signal for ejection and rocket initiation.

3.7.6 Environmental Performance - The ARV shall be designed and constructed such that it will function satisfactorily when subjected to the environmental requirements of Lockheed Specification LMSD-2916 with deviations as agreed to between LMSD and the contractor.

3.7.7 Recovery System - The ARV recovery system shall be designed to provide for initial detection and location in conjunction with LMSD recovery plan and systems equipment. The ARV recovery system including structure shall be capable of air or water recovery in day or night operation. Recovery devices included in the systems shall consist of the components explained within the following section. Initiation of this equipment is obtained at T=0 of the reentry trajectory and actuation shall be at an altitude of 55000 \pm 5000 feet. Recovery parachute design will be for a velocity of 25 ft/second at 1000 feet altitude.

3.7.7.1 Chaff Requirements - The recovery unit will contain a one-pound package of chaff packed with the parachute so that it will be dispersed at the same time the parachute is deployed.

3.7.7.2 Chaff Frequency and Response - The chaff shall be capable of a theoretical radar response as follows:

<u>Frequency</u>	<u>Response</u>
S-Band 2880 mc	6,082 ft. ²
L-B and 9375 mc	3,073 ft. ²

3.7.7.2 Radio Beacon - The radio beacon shall be vertically polarized and shall operate at a frequency of 232.4 mc with a 1000 cps tone.

3.7.7.4 Recovery Operating Time - The radio beacon and light shall be capable of operation for a period of ten hours after water impact.

3.7.7.5 Parachute Ejection Altitude - The parachute shall be ejected at an altitude of 55,000 \pm 5,000 feet.

3.7.7.6 Air Hatch Leads - The leads applied to the parachute during air hatch shall not exceed 5 g's.

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3.7.7.7 Sea Marker - The dye marker shall provide for visual acquisition by aircraft after the search area has been minimized by the homing beacon. Characteristics of the sea marker will be based upon sea conditions not exceeding state 2. The dye marker shall be capable of maintaining a 15 foot wide patch.

3.7.7.8 Beacon Lights - Beacon strobe lights will be packaged on the after-body for visual detection and location. The lights are primarily included for aircraft observation at close range after the search area has been minimized by the radio homing beacon. The intensity the lights shall be maximum commensurate with strobe light characteristics.

3.7.7.9 Recovery Environments - The recovery area environments shall be as follows:

Mean Cloudiness	45 to 50%	
Percent of Surface Winds that show dead calms	1 to 3%	
Frequency of Fog	Less than 1%	
Frequency of Mists	Less than 1%	
Frequency of Thunder Showers	1 to 3%	
Frequency of Rain	8 to 15%	
Air Temperature at Surface	71° to 83°F	Normal -
Water Temperature at Surface	75 to 83°F	77° winter,
	79°	79° summer

(Sea temperature averages 1/2° higher than Air temperature)

Visibility near surface greater than 10 NM	80% of time
Cloud Ceiling (6/10th of sky obscured) less than 10,000 ft.	73% of time
Cloud Ceiling less than 5000 ft.	68% of time

Vector mean of winds:	Altitude	From	Force
	27,000 ft	SW	30 K
	41,000 ft	W	28 K
	32,000 ft	W	20 K
	20,000 ft	E	10 K
	10,000 ft.	E	10 K
	5,000 ft	E	16 K
	Surface	NE	10 K

90 percent of time the maximum winds will be less than:

Altitude	From	Force
42,000 ft	W	55 K
32,000 ft	WSE	38 K

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(continued)

<u>Altitude</u>	<u>From</u>	<u>Force</u>
20,000 ft	E	25 K
10,000 ft	ENE	25 K
5,000 ft	ENE	20 K
Surface	NE	18 K

3.8 Ground Support Equipment

3.8.1 General Design Requirements - This specification covers only those pieces of ground support equipment that are required to support, to the extent specified herein, the ARV Vehicle System when it is situated at the following locations:

- a. LMSD Plant, Palo Alto
- b. Flight Test Base, Vandenberg Air Force Base

Specifications MIL-G-008512, MIL-A-8421, and MIL-M-8090 shall be used as guides for the design of ground support equipment. This specification does not cover ground handling equipments required to support ARV or ARV GSE as these are not provided by G.E.

3.8.2 Functional Requirements

3.8.2.1 Shipping Equipment - The following shipping containers are required.

- a. Re-entry Vehicle Shipping Container
- b. Recovery Aid and Parachute Test Unit Shipping Container
- c. Ground Support Equipment Shipping Containers

These shipping containers are required for security and environmental protection of their contents during shipment from the factory to LMSD Plant, Palo Alto or Flight Test Base, Vandenberg Air Force Base. Shipment will be by air under preferred handling conditions. Rail shipment of this equipment will not be a design requirement for these shipping containers.

3.8.2.2 Weight and Balance Equipment - This equipment is for field use only to weigh and determine the center of gravity of the Re-entry Vehicle about its three axes. With this equipment and an Analytical Balancing Procedure that will be provided, the moments and products of inertia of the Re-entry Vehicle will be determined by calculation. If the recommended limits are exceeded, ballasting will be accomplished in accordance with the Analytical Balancing Procedure noted above.

Space Requirements: 4' x 4' x 5' long
Weight: 1,500 lbs

3.8.2.3 Electrical Ground Support Equipment - The equipment listed below will be required for field checkout of the ARV Vehicle Electrical System:

a. Re-entry Vehicle Checkout Unit - This unit will consist of:

ARV Checkout Panel
Thrust Cone Checkout Panel
Recovery Aid Checkout Panel
Beacon Checkout Panel
Necessary Power Supplies

Space Requirements: 70" wide x 70" high x 25" deep
Weight: 1,300 lbs (max.)

b. Simulator - The Simulator will only be used as a means for checking the Re-entry Vehicle Checkout Unit prior to its use with the ARV Vehicle

Space Requirements: 25" wide x 60" high x 24" deep
Weight: 300 lbs

3.8.2.4 Power Requirements - The power listed below will be necessary to operate the Ground Support Equipment described previously:

220 V 60 cycle 3 phase 15 amperes
110 V 60 cycle 1 phase 50 amperes

3.8.3 Ground Equipment Finish Requirements - Finishes for ground support equipment shall conform to the requirements of the following paragraphs.

3.8.3.1 Front Panels - Finish exterior with one spray coat of MIL-E-7729, Type II Enamel (Low-Temperature Baking). Air dry 30 minutes, followed by a two-hour bake at 170-180°F. Color light grey, ANA or FED-STD-595.

3.8.3.2 Electronic Enclosures:

a. Finish exterior with one spray coat of MIL-E-7729, Type II Enamel (low-Temperature Baking). Air dry 30 minutes, followed by a two-hour bake at 170-180°F. Color light green, ANA or FED-STD-595.

3.8.3.3 Fixed and Mobile Equipment - Finish exterior surfaces with one brush or spray coat of MIL-E-7729 Type I Enamel (Air Drying). Air dry at least eight hours before handling. (Forty eight hours air dry is recommended for maximum hardness.) Color Strata Blue ANA or FED-STD-595.

3.8.4 Ground Support Equipment Environmental Requirements - Ground Support equipment shall be designed and constructed such that it will function satisfactorily when subjected to the environmental requirements of Lockheed Specification LMSD 2916 with deviations as agreed to between LMSD and the contractor.

4.0 INSPECTION AND ACCEPTANCE PROCEDURE

4.1 Inspection - The contractor shall provide for the inspection of material and parts in accordance with the requirements set forth in Specification MIL-Q-5923, Phase A.

4.2 Qualification Tests - Qualification Tests shall be performed on the complete recovery vehicle and individual components in accordance with contractor prepared specifications which shall be submitted to LMSD.

4.3 Acceptance Tests - Acceptance Tests shall be performed on the complete recovery vehicle and individual components in accordance with contractor prepared specifications which shall be submitted to LMSD. The testing shall be performed by the contractor, and monitored by LMSD.

5.0 PREPARATION FOR DELIVERY

5.1 Preservation and Packaging - Preservation and packaging requirements for the ARV, its components, and ground support equipment shall be as specified on the individual equipment drawings.

5.2 Marking for Shipment - Marking for shipment shall be in accordance with the LMSD requirements.

5.3 Modes of Transportation - The packaged units shall be shipped by air under preferred handling conditions. There shall be no shipment by rail of any units.

6.0 NOTES - Not applicable.

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FIGURE 1: VELOCITY AND LONGITUDINAL ACCELERATION HISTORY PROGRAM IIA

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TERMS AND CONDITIONS OF PURCHASE
(For CPFF Subcontracts under Prime Contracts with the Air Force)

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AGREEMENT AS TO TERMS AND CONDITIONS
APPLICABLE TO CPFF PURCHASE ORDERS
ISSUED UNDER AIR FORCE PRIME CONTRACTS

THIS AGREEMENT is entered into as of the _____ day of _____, 195____, between LOCKHEED AIRCRAFT CORPORATION, a corporation organized and existing under the laws of the State of California (herein called "Lockheed") and _____, a corporation organized and existing under the laws of the State of _____ (herein called "Contractor").

Lockheed and Contractor agree as follows:

Lockheed and Contractor have agreed upon the contract clauses contained in the attached "Terms and Conditions of Purchase" for use in negotiated cost type subcontracts or Purchase Orders between Lockheed and Contractor in connection with Lockheed's performance of cost-plus-fixed-fee Prime Contracts with the Department of the Air Force. Unless otherwise agreed to in writing at the time of execution, all such subcontracts or Purchase Orders entered into after the date of this Agreement and prior to its termination shall, if reference is made to this Agreement, incorporate by reference all of said "Terms and Conditions of Purchase". However, a copy of this Agreement or of said "Terms and Conditions of Purchase" need not be, and will not be, attached to any such subcontracts or Purchase Orders.

Any clause set forth in the attached "Terms and Conditions of Purchase" may be deleted, or modified, or additional clauses may be added thereto. This Agreement may be terminated in its entirety by either party upon thirty (30) days notice in writing to the other party. No deletion, modification, addition or termination shall affect any subcontract or Purchase Order theretofore entered into between the parties in which this Agreement has been incorporated by reference. No unilateral action by either party shall alter this Agreement or alter its application to any contract wherein this Agreement has been incorporated.

Notwithstanding any other provisions of this Agreement, the attached "Terms and Conditions of Purchase" shall be applicable only to subcontracts and Purchase Orders executed or issued by the Missile Systems Division of Lockheed.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above set forth.

LOCKHEED AIRCRAFT CORPORATION

By _____

By _____

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TERMS AND CONDITIONS OF PURCHASE
(For CPFF Subcontracts under Prime Contracts with the Air Force)

DEFINITIONS:

As used throughout these terms and conditions of purchase, the following terms shall have the meanings set forth below:

- a. The terms "the Department means the Department of the Air Force.
- b. The term "Secretary" means the Secretary, the Under Secretary, or any Assistant Secretary of the Department and the term "his duly authorized representative" means any person or persons or board (other than the Contracting Officer), authorized to act for the Secretary.
- c. The term "said purchase order" means the purchase order or purchase orders by Lockheed and accepted by Contractor which incorporates these terms and conditions of purchase by reference.
- d. The term "this subcontract" means said purchase order and these terms and conditions of purchase which are included therein by reference.
- e. The term "Lockheed" means Lockheed Aircraft Corporation, acting on behalf of its Missile Systems Division.
- f. The term "Contractor" means the party who accepts said purchase order.
- g. The term "prime contract" means the contract between Lockheed and the United States of America under which this subcontract is issued, the number of which is specified on the face of said purchase order.
- h. The term "Contracting Officer" means the person executing the prime contract on behalf of the Government, and any other officer or civilian employee who is a properly designated Contracting Officer, and the term includes, except as otherwise provided in this subcontract, the authorized representative of a Contracting Officer acting within the limits of his authority.
- i. The terms "work" or "services" mean all work to be performed under this subcontract including any studies covering fundamental, theoretical, or experimental investigations; any extension of the investigative findings and theories of a scientific or technical nature into practical application; any tangible items (hereinafter referred to as "supplies") furnished to Lockheed; and any reports, data, computations, plans, drawings and specifications with respect to any of the foregoing.

Lockheed and Contractor agree as follows:

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TERMS AND CONDITIONS:ARTICLE 1 - PROVISIONS APPLICABLE TO SERVICES AND SUPPLIES TO BE FURNISHED

a. Contractor agrees to perform the services and furnish and deliver the supplies specified in said purchase order in accordance with, (i) the terms and conditions contained herein, (ii) the specifications and requirements, delivery schedules, printed "Instruction", and typed provisions all as specifically set forth in said purchase order, and (iii) in accordance with each written changed purchase order and purchase order change notice relating to said purchase order issued pursuant to the provisions of Article 3 (Changes) hereof or entered into by mutual agreement between the parties hereto. Acceptance of such changed purchase orders and purchase order change notices shall be by signing and returning the acknowledgment copy thereof to Lockheed within fifteen (15) days after receipt of same.

b. Said purchase order and all changed purchase orders and purchase order change notices relating thereto which are accepted by Contractor are by this reference made a part of this subcontract. The terms of this subcontract shall supersede the terms set forth on the back of said purchase order. Any typewritten provisions appearing on the face of said purchase order or on the face of any such changed purchase orders or purchase order change notices shall supersede these terms and conditions to the extent in conflict therewith.

c. Said purchase order includes an amount covering estimated cost and fixed-fee, if any monetary consideration is to be paid by Lockheed.

ARTICLE 2 - PACKING AND CRATING

All supplies shall be packed in suitable containers for protection in shipment and storage except as otherwise specified in this subcontract. Packing must conform to requirements of carriers' tariffs. Contractor shall be responsible for damage in transit as a result of insufficient or improper packaging and for repair or replacement required as a result of non-conformance by Contractor with the terms of this article.

ARTICLE 3 - CHANGES

Lockheed may at any time, by a written order, and without notice to sureties, if any, require additional work within the general scope of said purchase order or make changes, within the general scope of said purchase order, in any one or more of the following:

- (i) drawings, designs, or specifications;
- (ii) method of shipment or packing;
- (iii) place of delivery; and
- (iv) the amount of Government-furnished or Lockheed-furnished property.

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If any such change or addition causes an increase or decrease in the estimated cost of, or the time required for performance of said purchase order, or otherwise affects any other provision of said purchase order, an equitable adjustment shall be made (i) in the estimated cost or delivery schedule, or both, (ii) in the amount of any fixed fee to be paid to Contractor, and (iii) in such other provisions of said purchase order as may be so affected, and said purchase order shall be modified in writing accordingly. Any claim by Contractor for adjustment under this article must be asserted within thirty (30) days from the date of receipt by Contractor of the notification of change or addition; provided, however, that Lockheed, if it decides that the facts justify such action, may receive and act upon any such claim asserted at any time prior to final payment under this subcontract. Nothing in this article, however, shall excuse Contractor from proceeding with this subcontract as changed.

✱ ARTICLE 4 - LIMITATION OF ALLOWABLE COSTS

a. It is estimated that the total cost to Lockheed, exclusive of any fixed fee, for the performance of this subcontract will not exceed the estimated cost set forth in said purchase order. Contractor agrees to use its best efforts to perform the work specified in said purchase order and all obligations under this subcontract within such estimated cost. If at any time Contractor has reason to believe that the costs which it expects to incur in the performance of said purchase order in the next succeeding thirty (30) days, when added to all costs previously incurred, will exceed eighty-five percent (85%) of the estimated cost then set forth in said purchase order or if at any time Contractor has reason to believe that the total cost to Lockheed, exclusive of any fixed fee, for the performance of said purchase order will be substantially greater or less than the then estimated cost thereof, Contractor shall notify Lockheed in writing to that effect, giving its revised estimate of such total cost for the performance of said purchase order, together with an appropriate breakdown of such estimate and a statement setting forth a reason for such anticipated increase or decrease in cost so that at the discretion of Lockheed and with the approval of the Contracting Officer, an appropriate increase or decrease may be made in the estimated cost without a corresponding change in fixed fee except as to adjustment in the fixed fee as provided for in Article 3 (Changes).

b. Lockheed shall not be obligated to reimburse Contractor for costs incurred in excess of the estimated cost set forth in said purchase order and Contractor shall not be obligated to continue performance under this subcontract or to incur costs in excess of the estimated cost set forth in said purchase order, unless and until Lockheed shall have notified Contractor in writing that such estimated cost has been increased and shall have specified in such notice a revised estimated cost which shall thereupon constitute the estimated cost of performance of this subcontract. When and to the extent that the estimated cost set forth in said purchase order has been increased, any costs incurred by Contractor in excess of such estimated cost prior to the increase in estimated cost shall be allowable to the same extent as if such costs had been incurred after such increase in estimated cost, if so stated in writing at the time such increase is authorized.

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ARTICLE 5 - ALLOWABLE COSTS AND FIXED FEE

a. Lockheed shall pay to Contractor, at the time and in the manner hereinafter set forth, for all services and supplies to be furnished hereunder the allowable costs therefor determined as hereinafter set forth in paragraph (b) of this article, plus a fee based on a percentage of the total estimated cost as specified in said purchase order. If Lockheed, because of the requirement of the Government, or for any other reasons, accepts services or supplies under this subcontract which do not conform to the guarantees set forth in Article 8 (Inspection and Correction of Defects) hereof, Lockheed shall pay the allowable costs as hereinafter defined of furnishing and delivering such services and supplies, subject to the provisions of said Article 8. The total estimated cost and fixed fee shall be subject to increases and decreases resulting from changes or additions as provided in Article 3 (Changes) hereof, or from changes in the scope or nature of the work to be performed under this subcontract which are agreed to by Contractor and Lockheed.

b. The allowable costs of performing this subcontract shall be those incurred by Contractor and properly chargeable to the subcontract which are claimed by Contractor and accepted as such by the Contracting Officer. The following criteria shall apply to the determination of allowable costs:

1. Allowable costs of performance shall be determined in accordance with Part 2 of Section XV of the Armed Services Procurement Regulations as in effect on the date of the prime contract.
2. Costs incurred for the performance of overtime work shall be allowable items of cost hereunder only if and to the extent that the overtime work for which such payments are made shall be authorized by Lockheed in writing prior to the performance of such overtime work. Each request for such authorization shall be submitted to Lockheed via the cognizant Government Representative at Contractor's plant.
3. Costs incurred by Contractor by reason of its use and occupancy of facilities furnished pursuant to facilities contracts authorized for use in connection with this subcontract insofar as they are allocable to the performance of this subcontract shall be allowable costs except to the extent that Contractor is reimbursed for such costs under other contracts or to the extent that provision is made apart from this subcontract or other contracts for the payment of such costs by the Government or otherwise than by Contractor, and except to the extent that such costs are included in Contractor's overhead.

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4. Appropriate credit shall be given to Lockheed for disposal of scrap and salvage and any surplus parts or material. Lockheed shall not be charged for excessive procurement of material and parts.
5. Costs incurred by Contractor in connection with third party claims based on bodily injury or death or property damage shall not be considered as allowable costs under this subcontract.
6. There shall be included as allowable indirect costs such overhead rates as may be established by Contractor and the Contracting Officer or his authorized representative in accordance with the principles of Armed Services Procurement Regulations. Pending establishment of final overhead rates for any period, Contractor shall be reimbursed at billing rates acceptable to the Contracting Officer or his authorized representative, which billing rates may be revised from time to time with the approval of the Contracting Officer or his authorized representative, subject to appropriate adjustment when the final rates for that period are established.

ARTICLE 6 - PAYMENT AND REIMBURSEMENT

a. Payment of the fixed fee provided for herein and reimbursement of allowable costs shall be made upon the basis of invoices submitted to the Contracting Officer which shall be in such form and detail as the Contracting Officer may require and shall be supported by statements of costs incurred by Contractor in the performance of this subcontract and claimed to constitute allowable costs.

b. The originals and two copies of such invoices covering allowable costs and fixed fee, certified by an Officer or other responsible Official of the Contractor Authorized by it to certify such statements shall be submitted to the Contracting Officer for approval and three additional copies shall be submitted to the cognizant Government audit agency. Such invoices may be provisionally approved by the Contracting Officer subject to final audit by the cognizant United States Government audit agency for Contractor's plant. The original and two copies of such invoices bearing the certification of such approval of the Contracting Officer shall be forwarded to Lockheed but not more frequently than once every thirty (30) days (or at more frequent intervals if approved by Lockheed). Within thirty (30) days after receipt and acceptance of such invoices, Lockheed shall make payment of such allowable costs approved by the Contracting Officer plus eighty-five per cent (85%) of the accrued fixed fee, as such fixed fee may be adjusted from time to time pursuant to Article (Changes). Accrual of such fixed fee shall be based upon the percentage of the performance of the work

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actually done hereunder as determined from estimates made by Contractor and approved by Lockheed. Upon completion of this subcontract, including execution of the release called for in Article 7 (Release Provisions) hereof, and the furnishing of the documents, data and reports called for in Article 29 (Patent Rights) hereof, the unpaid balance of the fixed fee, as the same may have been adjusted from time to time shall be paid to Contractor. All payments of allowable costs made pursuant hereto shall be subject to adjustment from time to time as a result of audit by the cognizant United States Government auditing agency, which adjustments shall be recognized and accepted by Contractor to the extent that such adjustments are approved by Lockheed and the Contracting Officer.

c. At any time or times prior to the final payment on account of allowable costs, the Contracting Officer or Lockheed may cause to be made such audit of invoices and statements of cost as shall be deemed proper. Payments made by Lockheed shall be subject to reduction to the extent of amounts included in any invoices which are found by the Contracting Officer not to constitute allowable costs and shall also be subject to reduction for overpayments or to increase for under-payments made on preceding invoices.

d. If any amount actually paid by Lockheed to Contractor is disallowed to Lockheed by Lockheed's local Government Auditors, by the Contracting Officer at Lockheed's plant or by the General Accounting Office, as an item of cost under its Government prime contract, or if Lockheed is required, because of any action of the Government to refund or credit to the Government any amount with respect to an item of cost for which it has reimbursed Contractor, Contractor shall, on demand made by Lockheed after such disallowance or after Lockheed shall have made such refund or given such credit, promptly repay to Lockheed the amount which Lockheed has paid to Contractor with respect to any such item or items; provided, however, that to the extent such disallowance or such refund or credit is the result of the performance by Contractor of work authorized by Lockheed but not authorized by the prime contract, Contractor shall not be required to repay to Lockheed the amount which Lockheed has paid to Contractor with respect to the performance of such work. In the event Lockheed shall recover any amount so disallowed or so refunded or credited by it to the Government with respect to any such item or items, Lockheed shall pay the amount of such recovery to Contractor if the same shall not theretofore have been repaid to Contractor.

e. In the event that any department, agency or representative of the Government disallows any cost granted under this subcontract and in Lockheed's opinion it appears that such disallowance is inequitable and that such cost should be considered allowable, then Lockheed agrees to negotiate with such department, agency or representative of the Government to obtain the reinstatement of such costs as allowable under the terms of this subcontract.

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ARTICLE 7 -- RELEASE PROVISIONS

a. Contractor and each assignee under an assignment entered into under this subcontract and in effect at the time of final payment under this subcontract shall execute and deliver at the time of and as a condition precedent to final payment under this subcontract, a release discharging Lockheed and the Government, and their respective officers, agents and employees, of and from all liabilities, obligations, and claims arising out of or under this subcontract subject only to the following exceptions:

1. Specified claims in stated amounts or in estimated amounts where the amounts are not susceptible of exact statement by Contractor.
2. Claims, together with reasonable expenses incidental thereto, based upon the liabilities of Contractor to third parties arising out of the performance of this subcontract (but not including claims based on bodily injury or death or property damage) which are not known to Contractor on the date of the execution of the release, and of which Contractor gives notice in writing to Lockheed not more than five (5) years after the date of the release or the date of any notice to Contractor that Lockheed is prepared to make final payment, whichever is earlier.
3. Claims for reimbursement of costs (other than expenses of Contractor by reason of its indemnification of Lockheed and the Government against patent liability), including reasonable expenses incidental thereto, incurred by Contractor under the provisions of this subcontract relating to patents.

b. Contractor agrees that any refunds, rebates or credits (including any interest thereon) accruing to or received by Contractor or any assignee which arise out of the performance of this subcontract and on account of which Contractor has received reimbursement shall be paid by Contractor to Lockheed. Contractor and each assignee under an assignment entered into under this subcontract and in effect at the time of final payment under this subcontract shall execute and deliver at the time of and as a condition precedent to final payment under this subcontract, an assignment to Lockheed of refunds, rebates or credits (including any interest thereon) arising out of the performance of this subcontract, in form and substance satisfactory to Lockheed. Reasonable expenses incurred by Contractor for the purpose of securing any such refunds, rebates or credits shall constitute allowable costs when approved by the Contracting Officer.

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c. In addition to the release required by paragraph (a) above, Contractor shall, prior to final payment, comply with the provisions of paragraph (i) of Article 26 hereof and with paragraph (i) of Article 22 hereof.

ARTICLE 8 - INSPECTION AND CORRECTION OF DEFECTS

a. All work under this subcontract shall be subject to inspection and test by the Government and/or Lockheed, to the extent practicable at all times and places, including the period of performance, and in any event prior to final acceptance. Contractor shall provide and maintain and shall require its subcontractors to provide and maintain an inspection system acceptable to the Government and Lockheed covering the work hereunder. The Government and/or Lockheed, through any authorized representative, may inspect the plant or plants of Contractor or any of its subcontractors engaged in the performance of this subcontract. If any inspection or test is made by the Government or Lockheed on the premises of Contractor or its subcontractor, Contractor shall provide and shall require its subcontractors to provide all reasonable facilities and assistance for the safety and convenience of Lockheed or the Government inspectors in the performance of their duties. All inspections and tests by the Government or Lockheed shall be performed in such a manner as will not unduly delay the work.

b. Contractor warrants that the services rendered in the performance of this subcontract will conform to the requirements of this subcontract and to high professional standards in the field, and that any supplies delivered to Lockheed and/or the Government under this subcontract will conform to the requirements of this subcontract and will not be defective in material or workmanship.

c. At any time during the performance of this subcontract, but not later than twelve (12) months after final acceptance by the Government of the services or supplies furnished hereunder, the Government or Lockheed may require Contractor to remedy by correction or replacement, as directed by the Contracting Officer, any failure by Contractor to comply with its obligations under paragraph (b) hereof. Except as otherwise provided in paragraph (d) hereof, the cost of any such replacement or correction shall be included in allowable costs determined as provided in the article of this subcontract entitled "Allowable Costs and Fixed Fee", but no additional fee shall be payable with respect thereto. Corrected supplies shall not be tendered again for acceptance unless the former tender and the requirement of correction is disclosed. If Contractor fails to proceed with reasonable promptness to perform such replacement or correction, Lockheed (i) may by contract or otherwise perform such replacement or correction and charge to Contractor any increased cost occasioned Lockheed thereby or may reduce any fixed fee payable under this subcontract, (or require repayments of any fixed fee theretofore paid) in such amount as may be equitable under the

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circumstances, or (ii) in the case of supplies not delivered, may require the delivery of such supplies, and shall have the right to reduce any fixed fee payable under this subcontract (or to require repayment of any fixed fee theretofore paid) in such amount as may be equitable under the circumstances, or (iii) may terminate this subcontract for default as provided in the article of this subcontract entitled "Termination".

d. Notwithstanding the provisions of paragraph (c) hereof, Lockheed may at any time require correction or replacement of services or supplies by Contractor without cost to Lockheed, which are defective in material or workmanship, or otherwise not in conformity with the requirements of this subcontract if such failure is due to fraud, lack of good faith or willful misconduct on the part of any of Contractor's directors or officers, or on the part of any of its managers, superintendents, or other equivalent representatives, who has supervision or direction of (i) all or substantially all of Contractor's business, or (ii) all or substantially all of Contractor's operations at any one plant or separate location in which this subcontract is being performed, or (iii) a separate and complete major industrial operation in connection with performance of this subcontract. Fraud, lack of good faith or willful misconduct on the part of any such supervisory personnel shall be deemed to include the selection of individual employees or the retention of employees after any of such supervisory personnel has reason to believe that such employees are habitually careless or otherwise unqualified.

e. Corrected services or supplies tendered as replacements, shall be subject to the provisions of this article in the same manner and to the same extent as supplies originally delivered under this subcontract.

f. Records of all inspection work shall be maintained by Contractor and shall be kept complete and available to the Government and Lockheed during the performance of this subcontract and for such longer period as may be specified in this subcontract.

g. Except as otherwise provided in this subcontract, Contractor's obligation to correct or replace Government-furnished property (which is property in the possession of or acquired directly by the Government and delivered or otherwise made available to Contractor) shall be governed by the provisions of the article of this subcontract entitled "Government Property".

h. Preliminary inspection and acceptance, if any, shall be at Contractor's plant as set forth in said purchase order; but in any event final inspection and acceptance by Lockheed shall be at Lockheed's plant.

ARTICLE 9 - IDEMNIFICATION

In the event Contractor, its employees, agents, subcontractors and/or lower-tier subcontractors enter premises occupied by or under the control of Lockheed in the performance of this subcontract, Contractor agrees that it will

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indemnify and hold harmless Lockheed, its officers and employees from any loss, cost, damage, expense or liability by reason of property damage or personal injury of whatsoever nature or kind arising out of, as a result of, or in connection with such performance occasioned in whole or in part by the actions or omissions of Contractor, its employees, agents, subcontractors and/or lower-tier subcontractors; and Contractor agrees that it and its subcontractors and lower-tier subcontractors will maintain public liability and property damage insurance in reasonable limits covering the obligations set forth above, and will maintain proper workmen's compensation insurance covering all employees rendering performance under this subcontract.

ARTICLE 10 - ASSIGNMENT OF CLAIMS

a. Neither this subcontract nor any interest hereunder nor any sums becoming due to Contractor hereunder shall be assigned by Contractor without the prior written consent of Lockheed, except that claims for monies due or to become due Contractor from Lockheed under this subcontract may be assigned to a bank, trust company or other financing institution, including any federal lending agency. Any such assignment of monies due or to become due shall cover all amounts payable under this subcontract and not already paid, and shall not be made to more than one party, except that any such assignment may be made to one party as agent or trustee for two (2) or more parties participating in such financing. Payment by Lockheed to an assignee of any claim under this subcontract shall be subject to set-off or recoupment for any present or future claim or claims arising in connection with this subcontract which Lockheed may have against Contractor.

b. In the event of any such assignment the assignee shall file four (4) signed copies of a written notice of the assignment, together with one copy of the instrument of assignment, with Lockheed.

c. Any claim under this subcontract which has been assigned pursuant to the foregoing provisions of this article may be further assigned and reassigned only with the prior written consent of Lockheed to a bank, trust company or other financing institution, including any federal lending agency. In the event of such further assignment or reassignment the assignee shall be required to file one signed copy of a written notice of the further assignment or reassignment, together with a true copy of the instrument of further assignment or reassignment with Contractor; and shall file four (4) signed copies of such written notice, together with four (4) copies of such instrument with Lockheed.

d. No assignee shall divulge any information concerning this subcontract except to those persons concerned with the transaction. In no event shall copies of this subcontract or of any plans, specifications, or other similar documents relating to work under this subcontract, if marked "Top Secret", "Secret" or "Confidential", be furnished to any assignee of any claim arising under this subcontract or to any other person not entitled to receive the same; provided, that a copy of any part or all of this subcontract so marked may be furnished, or any information contained therein may be disclosed, to such assignee upon the prior written authorization of Lockheed or the Contracting Officer.

e. Indication of the assignment of claim and of any further assignment thereof and the name of the assignee shall be made on all vouchers or invoices certified by Contractor.

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ARTICLE 11 - RECORDS

a. Contractor agrees to maintain books and records, documents and other evidence pertaining to the costs and expenses of this subcontract (hereinafter collectively called the "records") to the extent and in such detail as will properly reflect all net costs, direct and indirect, of labor, materials, equipment, supplies and services, and other costs and expenses of whatever nature for which reimbursement is claimed under the provisions of this subcontract. Contractor's accounting procedures and practices shall be subject to the approval of the Contracting Officer; provided, however, that no material change will be required to be made in Contractor's accounting procedures and practices if they conform to generally accepted accounting practices and if the costs properly applicable to this subcontract are readily ascertainable therefrom.

b. Contractor agrees to make available at the office of Contractor at all reasonable times during the period set forth in paragraph (d) below any of the records for inspection, audit or reproduction by any authorized representative of the Department or of the Comptroller General.

c. In the event the Comptroller General or any of his duly authorized representatives determine that his audit of the amounts reimbursed under this subcontract as transportation charges will be made at a place other than the office of Contractor, Contractor agrees to deliver, with the reimbursement voucher covering such charges, or as may be otherwise specified, within two (2) years after reimbursement of charges covered by any such voucher, to such representatives as may be designated for that purpose through the Contracting Officer, such documentary evidence in support of transportation costs as may be required by the Comptroller General or any of his duly authorized representatives.

d. Except for documentary evidence delivered to the Government pursuant to paragraph (c) above, Contractor shall preserve and make available its records for a period of six (6) years (unless a longer period of time is provided by applicable statute) from the date of the voucher or invoice submitted by Contractor after the completion of the work under this subcontract and designated by Contractor as the "completion voucher" or "completion invoice", or, in the event this subcontract has been completely terminated, from the date of the termination settlement agreement; provided, however, that records which relate to (i) appeals under the clause of the prime contract entitled "Disputes", (ii) litigation or the settlement of claims arising out of the performance of this subcontract, or (iii) costs or expenses of the subcontract as to which exception has been taken by the Comptroller General or any of his duly authorized representatives, shall be retained by Contractor until such appeals, litigation, claims or exceptions have been disposed of, but in no event for less than the six-year period mentioned above.

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e. Except for documentary evidence delivered pursuant to paragraph (c) above, and the records described in the proviso of paragraph (c) above, Contractor may in fulfillment of its obligation retain its records as required by this article substitute photographs, microphotographs or other authentic reproductions of such records, after the expiration of two (2) years following the last day of the month of reimbursement to Contractor of the invoice or voucher to which such records relate, unless a shorter period is authorized by the Contracting Officer with the concurrence of the Comptroller General or his duly authorized representative.

f. The provisions of this article, including this paragraph (f) shall be applicable to and included in each subcontract hereunder which is on a cost, a cost-plus-fixed-fee, time-and-material or labor-hour basis.

g. Contractor shall include in each subcontract hereunder, other than those described in paragraph (f) above, a provision to the effect that the subcontractor agrees that the Comptroller General or the Department, or any of their duly authorized representatives, shall, until the expiration of three (3) years after final payment under the subcontract, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor involving transactions related to the subcontract. The term "subcontract", as used in this paragraph (g) only, excludes (i) purchase orders not exceeding \$1,000 and (ii) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

ARTICLE 12 - SUBCONTRACTS

a. Contractor shall give advance notification to Lockheed and the Contracting Officer of any proposed subcontract or purchase order hereunder which (i) is on a cost or cost-plus-a-fixed-fee basis or (ii) is on a fixed-price basis exceeding in dollar amount either \$25,000 or five percent (5%) of the total estimated cost of this subcontract.

b. Contractor shall not, without the prior written consent of Contracting Officer, place any subcontract or purchase order which (i) is on a cost or a cost-plus-a-fixed-fee basis, or (ii) is on a fixed-price basis exceeding in dollar amount either \$25,000 or five percent (5%) of the total estimated cost of this subcontract, or (iii) provides for the fabrication, purchase, rental, installation or other acquisition, of any item of industrial facilities, or of special tooling having a value in excess of \$1,000 or (iv) is on a time-and-material or labor-hour basis. Lockheed may, in its discretion, ratify in writing any such subcontract; such action shall constitute the consent of Lockheed as required by this paragraph (b).

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c. Contractor agrees that no subcontract or purchase order placed under this subcontract shall provide for payment on a cost-plus-a-percentage-of-cost basis.

d. The Contracting Officer may, in its discretion, specifically approve in writing any of the provisions of a subcontract. However, such approval or the consent of the Contracting Officer obtained as required by this clause shall not be construed to constitute a determination of the allowability of any cost under this subcontract, unless such approval specifically provides that it constitutes a determination of the allowability of such cost.

e. Contractor shall give Lockheed and the Contracting Officer immediate notice in writing of any action or suit filed, and prompt notice of any claim made against Contractor by any subcontractor or vendor which, in the opinion of Contractor, may result in litigation, related in any way to this subcontract with respect to which Contractor may be entitled to reimbursement from Lockheed.

ARTICLE 13 - UTILIZATION OF SMALL BUSINESS CONCERNS

a. It is the policy of the Government as declared by the Congress to bring about the greatest utilization of small business concerns which is consistent with efficient production.

b. Contractor agrees to accomplish the maximum amount of subcontracting to small business concerns that Contractor finds to be consistent with the efficient performance of this subcontract.

✱ ARTICLE 14 - TERMINATION

a. The performance of work under this subcontract may be terminated by Lockheed in accordance with this article in whole, or from time to time in part, (i) whenever Contractor shall default in performance of this subcontract in accordance with its terms (including in the term "default" any such failure by Contractor to make progress in the prosecution of the work hereunder as endangers such performance), and shall fail to cure such default within a period of ten days (or such longer periods as Lockheed may allow) after receipt from Lockheed of a notice specifying the default, or (ii) in the event of the institution of any proceedings by or against Contractor in bankruptcy or insolvency or under any provisions of the Bankruptcy Act or for the appointment of a receiver or trustee or an assignment for the benefit of Contractor's creditors, or (iii) whenever for any reason Lockheed shall determine that such termination is necessary. Any such termination shall be effected by delivery to Contractor of a Notice of Termination specifying the reason for such termination, the extent to which performance of work under the subcontract is terminated, and the date upon which such termination becomes effective. If, after notice of termination

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of this subcontract for default under (i) above, it is determined that Contractor's failure to perform or to make progress in performance is due to causes beyond the control and without the fault or negligence of Contractor pursuant to the provisions of the article of this subcontract entitled "Excusable Delays," the Notice of Termination shall be deemed to have been issued under (iii) above, and the rights and obligations of the parties hereto shall in such event be governed accordingly.

b. After receipt of a Notice of Termination and except as otherwise directed by Lockheed, Contractor shall (i) stop work under the subcontract on the date and to the extent specified in the Notice of Termination; (ii) place no further orders or subcontracts for materials, services or facilities except as may be necessary for completion of such portion of the work under the subcontract as is not terminated; (iii) terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the Notice of Termination; (iv) assign to Lockheed, in the manner and to the extent directed by Lockheed, all of the right, title and interest of Contractor under the orders or subcontracts so terminated, in which case Lockheed shall have the right in its discretion to settle or pay any or all claims arising out of the termination of such orders and subcontracts; (v) with the approval or ratification of Lockheed, to the extent it may require, which approval or ratification shall be final and conclusive for all purposes of this article, settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, the cost of which would be reimbursable, in whole or in part, in accordance with the provisions of this subcontract; (vi) transfer title (to the extent that title has not already been transferred) and, in the manner, to the extent and at the times directed by Lockheed, deliver to Lockheed (A) the fabricated parts or unfabricated parts, work in process, completed work, supplies, and other material produced as a part of, or acquired in respect of the performance of, the work terminated by the Notice of Termination, (B) the completed or partially completed plans, drawings, information and other property which, if the subcontract had been completed, would be required to be furnished to Lockheed, and (C) the jigs, dies and fixtures, and other special tools and tooling acquired or manufactured, for the performance of this subcontract, for the cost of which Contractor has been or will be reimbursed under this subcontract; (vii) use its best efforts to sell in the manner, at the time, to the extent, and at the price or prices directed or authorized by Lockheed, any property of the types referred to in provision (vi) of this paragraph; provided, however, that Contractor (A) shall not be required to extend credit to any purchaser, and (B) may acquire any such property under the conditions prescribed by and at a price or prices approved by Lockheed; and provided, further, that the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by Lockheed to Contractor under this subcontract or shall otherwise be

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credited to the price or cost of the work covered by this subcontract or paid in such other manner as Lockheed may direct, (viii) complete performance of such part of the work as shall not have been terminated by the Notice of Termination; and (ix) take such action as may be necessary; or as Lockheed may direct, for the protection and preservation of the property related to this subcontract which is in the possession of Contractor and in which Lockheed or the Government have or may acquire an interest. Contractor shall proceed immediately with the performance of the above obligations notwithstanding any delay in determining or adjusting the amount of the fixed fee or any item or reimbursable cost, under this article.

c. After receipt of a Notice of Termination, Contractor shall submit to Lockheed its termination claim in the form and with the certification prescribed by Lockheed. Such claim shall be submitted promptly but in no event later than twelve (12) months from the effective date of termination, unless one or more extensions in writing are granted by Lockheed upon request of Contractor made in writing within such twelve (12) month period or authorized extension thereof. However, if Lockheed determines that the facts justify such action, it may receive and act upon any such termination claim at any time after such twelve (12) month period or any extension thereof. Upon failure of Contractor to submit its termination claim within the time allowed, Lockheed shall determine, with the approval of the Contracting Officer, on the basis of information available to it, the amount, if any, due to Contractor by reason of the termination and shall thereupon pay to Contractor the amount so determined.

d. Subject to the provisions of paragraph (c), Contractor and Lockheed may agree upon the whole or any part of the amount or amounts to be paid (including an allowance for the fixed fee) to Contractor by reason of the total or partial termination of work pursuant to this article. Said purchase order shall be amended accordingly, and Contractor shall be paid the agreed amount.

e. In the event of the failure of Contractor and Lockheed to agree in whole or in part, as provided in paragraph (d) above, as to the amounts with respect to costs and fixed fee or as to the amount of the fixed fee, to be paid to Contractor in connection with the termination of work pursuant to this article, Lockheed shall determine, on the basis of information available to it, the amount, if any, due to Contractor by reason of the termination and shall pay to Contractor the amount determined as follows:

(i) If the settlement includes cost and fixed fee

- (A) There shall be included therein all costs and expenses reimbursable in accordance with this subcontract, not previously paid to Contractor for the performance of this subcontract prior to the effective date of the

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Notice of Termination, and such of these costs as may continue for a reasonable time thereafter with the approval of or as directed by Lockheed; provided, however, that Contractor shall proceed as rapidly as practicable to discontinue such costs.

- (B) There shall be included therein, so far as not included under (A) above, the cost of settling and paying claims arising out of the termination of work under subcontracts or orders, as provided in paragraph (b) (v) above, which are properly chargeable to the terminated portion of this subcontract.
- (C) There shall be included therein the reasonable costs of settlement, including accounting, legal, clerical and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the subcontract and for the termination and settlement of purchase orders and subcontracts thereunder, together with reasonable storage, transportation, and other costs incurred in connection with the protection or disposition of termination inventory; provided, however, that if the termination is for a reason specified in paragraph (a) (i) or (a) (ii) of this Article 14 there shall not be included any amounts for the preparation of Contractor's settlement proposal.
- (D) There shall be included therein a portion of the fixed fee payable under the subcontract determined as follows:
 - (1) In the event of the termination of this subcontract pursuant to paragraph (a) (iii) of this Article 14, there shall be paid a percentage of the fee equivalent to the percentage of the completion of work contemplated by this subcontract, less fixed fee payments previously made hereunder.
 - (2) In the event of the termination of this subcontract for the reasons specified in paragraph (a) (i) and (ii) this Article 14, the total fixed fee payable shall be such proportionate part of the fee (or, if this subcontract calls for supplies of different types, of such part of the fee as is reasonably allocable to the type of supplies under consideration) as the total number of supplies delivered to and accepted by Lockheed bears to the total number of supplies of a like kind called for by this subcontract. If the amount

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determined under this paragraph is less than the total payment of fixed fee theretofore made to Contractor, Contractor shall repay to Lockheed the excess amount.

- (ii) If the settlement includes only the fixed fee, the amount thereof will be determined in accordance with subparagraph (e) (i) (D) above.

f. In arriving at the amount due Contractor under this article there shall be deducted (i) all unliquidated advance or other unliquidated payments, theretofore made to Contractor, (ii) any claim which Lockheed may have against Contractor in connection with this subcontract, and (iii) the agreed price for, or the proceeds of sale of, any materials, supplies or other things acquired by Contractor or sold pursuant to the provisions of this article and not otherwise recovered by or credited to Lockheed.

g. In the event of a partial termination, the portion of the fixed fee which is payable with respect to the work under the continued portion of the subcontract shall be equitably adjusted by agreement between Contractor and Lockheed, and such adjustment shall be evidenced by an amendment to said purchase order.

h. Lockheed may from time to time, under such terms and conditions as it may prescribe, make partial payments and payments on account against costs incurred by Contractor in connection with the terminated portion of the subcontract whenever in the opinion of Lockheed the aggregate of such payments shall be within the amount to which Contractor will be entitled hereunder. If the total of such payments is in excess of the amount finally determined to be due under this article, such excess shall be payable by Contractor to Lockheed upon demand, together with interest computed at the rate of six per cent (6%) per annum, for the period from the date such excess payment is received by Contractor to the date on which such excess is repaid to Lockheed; provided, however, that no interest shall be charged with respect to any such excess payment, attributable to a reduction in Contractor's claim by reason of retention or other disposition or termination inventory until ten (10) days after the date of such retention or disposition.

i. The provisions of this article relating to the fixed fee shall be inapplicable if this contract does not provide for payment of a fixed fee.

ARTICLE 15 - EXCUSABLE DELAYS

a. Contractor shall not be in default by reason of any failure in performance of this subcontract in accordance with its terms (including any failure by Contractor to make progress in the prosecution of the work hereunder which endangers such performance) if such failure arises out of causes beyond the control and without the fault or negligence of Contractor. Such causes include, but are not restricted to: acts of God or of the public enemy; acts

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of the Government; fires; floods; epidemics; quarantine restrictions; strikes; freight embargoes; unusually severe weather; and failure of lower-tier subcontractors to perform or make progress due to such causes, unless Lockheed shall have determined that the supplies or services to be furnished under the lower-tier subcontract were obtainable from other sources and shall have ordered Contractor in writing to procure such services or supplies from such other sources, and Contractor shall have failed reasonably to comply with such order, Contractor shall promptly notify Lockheed of any anticipated failure of performance by reason of such causes. Upon request of Contractor, Lockheed shall ascertain the facts and extent of such failure and if it shall determine that such failure was occasioned by any one or more of the said causes, the delivery schedule shall be revised accordingly, subject to the rights of Lockheed and the Government under the Article hereof entitled "Termination".

b. If Contractor, by reason of a cause, or causes, other than those specified in (a) above, will be unable to complete the contract work and make delivery at the time specified in said purchase orders, it may give Lockheed written notice of the anticipated default with the reasons therefor, provided such notice is given not less than forty-five (45) days before the delivery dates specified in said purchase order or within such time as Lockheed deems sufficient. If such notice is duly given, then, to the extent the interest of Lockheed makes an extension desirable, Lockheed may, in its discretion, extend the period of time specified in said purchase order for such period as it deems advisable, and the said purchase order shall then be modified in writing accordingly.

ARTICLE 16 - BUY AMERICAN ACT

Contractor agrees that there will be delivered under this subcontract only such unmanufactured articles, materials, and supplies (which term "articles, materials, and supplies" is hereinafter referred to in this article as "supplies") as have been mined or produced in the United States, and only such manufactured supplies as have been manufactured in the United States substantially all from supplies mined, produced, or manufactured, as the case may be, in the United States. Pursuant to the Buy American Act (41 U.S. Code 10a-d), the foregoing provision shall not apply (i) with respect to supplies excepted by the Secretary from the application of that Act, (ii) with respect to supplies for use outside the United States, or (iii) with respect to the supplies to be delivered under this subcontract which are of a class or kind determined by the Secretary or his duly authorized representative not to be mined, produced, or manufactured, as the case may be, in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality, or (iv) with respect to such supplies, from which the supplies to be delivered under this subcontract are manufactured, as are of a class or kind determined by the Secretary or his duly authorized representative not to be mined, produced, or manufactured, as the case may be, in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality, provided, that this exception (iv) shall not permit delivery of supplies manufactured outside the United States if such supplies are manufactured in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality

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ARTICLE 17 - EIGHT-HOUR LAW OF 1912

This subcontract, to the extent that it is of a character specified in the Eight-Hour Law of 1912 as amended (40 U.S. Code 324-326) and is not covered by the Walsh-Healey Public Contracts Act (41 U.S. Code 35-45), is subject to the following provisions and exceptions of said Eight-Hour Law of 1912 as amended, and to all other provisions and exceptions of said Law:

No laborer or mechanic doing any part of the work contemplated by this subcontract, in the employ of Contractor or any subcontractor contracting for any part of the said work, shall be required or permitted to work more than eight hours in any one calendar day upon such work, except upon the condition that compensation is paid to such laborer or mechanic in accordance with the provisions of this article. The wages of every such laborer and mechanic employed by Contractor or any subcontractor engaged in the performance shall be computed on a basic day rate of eight hours per day; and work in excess of eight hours per day is permitted only upon the condition that every such laborer and mechanic shall be compensated for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay. For each violation of the requirements of this article a penalty of five dollars shall be imposed upon Contractor for each such laborer or mechanic for every calendar day in which such employee is required or permitted to labor more than eight hours upon said work without receiving compensation computed in accordance with this article; and all penalties thus imposed shall be withheld for the use and benefit of the Government.

ARTICLE 18 - WALSH-HEALEY PUBLIC CONTRACTS ACT

If this subcontract is for the manufacture or furnishing of materials, supplies, articles or equipment in an amount which exceeds or may exceed \$10,000 and is otherwise subject to the Walsh-Healey Public Contracts Act as amended (41 U.S. Code 35-45), there are hereby incorporated by reference all representations and stipulations required by said Act and regulations issued thereunder by the Secretary of Labor, such representations and stipulations being subject to all applicable rulings and interpretations of the Secretary of Labor which are now or may hereafter be in effect.

ARTICLE 19 - NONDISCRIMINATION IN EMPLOYMENT

a. In connection with the performance of work under this subcontract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The aforesaid provision shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices which Contractor shall obtain from the Government setting forth the provisions of the nondiscrimination clause.

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b. Contractor further agrees to insert the foregoing provision in all subcontracts hereunder except subcontracts for standard commercial supplies or raw materials.

ARTICLE 20 - NOTICE TO LOCKHEED AND TO THE GOVERNMENT OF LABOR DISPUTES

Whenever Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this subcontract, Contractor shall immediately give notice thereof, including all relevant information with respect thereto, to Lockheed and to the Contracting Officer.

ARTICLE 21 - CONVICT LABOR

In connection with the performance of work under this subcontract, Contractor agrees not to employ any person undergoing sentence of imprisonment at hard labor.

ARTICLE 22 - GOVERNMENT PROPERTY

a. Title to all property purchased by Contractor, for the cost of which Contractor is entitled to be reimbursed as a direct item of cost under this subcontract, shall pass to and vest in the Government upon delivery of such property by the vendor. Title to other property, the cost of which is reimbursable to Contractor under this subcontract, shall pass to and vest in the Government upon (i) issuance for use of such property in the performance of this subcontract, or (ii) commencement of processing or use of such property in the performance of this subcontract, or (iii) reimbursement of the cost thereof by Lockheed, whichever first occurs.

b. All property owned by the Government which is furnished by Lockheed or the Government to Contractor in connection with the performance of this subcontract, together with all property acquired by Contractor title to which vests in the Government pursuant to paragraph (a) of this article, are collectively referred to in this article as "Government Property". If the delivery or performance dates for the supplies or services to be furnished by Contractor under this subcontract are based upon the expectation that Government-Furnished Property suitable for use will be delivered to Contractor at the times stated in said purchase order or, if not so stated, in sufficient time to enable Contractor to meet such delivery or performance dates; then upon timely written request made by Contractor, Lockheed will make a determination of the delay occasioned Contractor and shall equitably adjust the estimated cost, fixed fee, or delivery or performance dates or all of them, and any other contractual provisions affected by such delay in accordance with the procedures provided for in the clause of this subcontract entitled "Changes" (Article 3). In the event that Government-Furnished Property is received by Contractor in a condition not suitable for the intended use, Contractor shall upon receipt thereof notify Lockheed of such fact and as directed by the Contracting Officer either (i) return such property at Government expense or otherwise dispose of the

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property, or (ii) effect repairs or modification. Upon completion of (i) or (ii) above and upon written request of Contractor, Lockheed shall equitably adjust the estimated cost, fixed fee, or delivery or performance dates, or all of them, and any other contractual provision affected by the return, disposition, repair or modification, in accordance with the procedures provided for in Article 3 of this subcontract. The foregoing provisions for adjustment are exclusive and Lockheed shall not be liable to suit for breach of contract by reason of any delay in delivery of Government-Furnished Property or delivery of such property in a condition not suitable for its intended use.

c. Title to Government Property shall not be affected by the incorporation or attachment thereof to any property not owned by the Government, nor shall such Government Property, or any part thereof, be or become a fixture or lose its identity as personality by reason of affixation to any realty. Contractor shall establish and operate a system acceptable to Lockheed for maintenance of property control records and identification of the Government Property in accordance with the requirements of the "Manual for the Control of Government Property in Possession of Contractors" (Appendix B, Armed Services Procurement Regulation), as in effect on the date of the prime contract, which manual is hereby incorporated by reference and made a part of this subcontract.

d. The Government Property provided or furnished pursuant to the term of this subcontract shall, unless otherwise provided herein, be used only for the performance of this subcontract.

e. Contractor shall maintain and administer in accordance with sound industrial practice, a program for the maintenance, repair, protection and preservation of Government Property so as to assure its full availability and usefulness for the performance of this subcontract. Contractor shall take all reasonable steps to comply with all appropriate directions or instructions which Lockheed or the Contracting Officer may prescribe as reasonably necessary for the protection of Government Property.

f. (i) Contractor shall not be liable for any loss of or damage to the Government Property, or for expenses incidental to such loss or damage, except that Contractor shall be responsible for any such loss or damage (including expenses incidental thereto) (A) which results from wilful misconduct or lack of good faith on the part of any of Contractor's directors or officers, or on the part of any of its managers, superintendents, or other equivalent representatives, who has supervision or direction of (I) all or substantially all of Contractor's business, or (II) all or substantially all of Contractor's operations at any one plant or separate location in which this subcontract is being performed, or (III) a separate and complete major industrial operation in connection with the performance of this subcontract; or (B) which results from a failure on the part of Contractor due to the wilful misconduct or lack of good faith on the part of any of its directors, officers, or other representatives mentioned in subparagraph (A) above, (I) to maintain and administer, in accordance with sound industrial practice, the program for maintenance, repair protection and

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and preservation of Government Property as required by paragraph (d) hereof, or (II) to take all reasonable steps to comply with any appropriate written directions of the Contracting Officer under paragraph (d) hereof, or (C) for which Contractor is otherwise responsible under the express terms of this subcontract; or (D) which results from a risk expressly required to be insured under this subcontract, but only to the extent of the insurance so required to be procured and maintained, whichever is greater; or (E) which results from a risk which is in fact covered by insurance or for which Contractor is otherwise reimbursed, but only to the extent of such insurance or reimbursement; provided that, if more than one of the above exceptions shall be applicable in any case, Contractor's liability under any one exception shall not be limited by any other exception. This Article shall not be construed as relieving a lower-tier subcontractor from liability for loss or destruction of or damage to Government Property in its possession or control, except to the extent that the lower-tier subcontract, with the prior approval of Lockheed or the Government, may provide for the relief of the lower-tier subcontractor from such liability. In the absence of such approval, the lower-tier subcontract shall contain appropriate provisions requiring the return of all Government Property in as good condition as when received, except for reasonable wear and tear or for the utilization of the property in accordance with the provisions of the prime contract.

(ii) Contractor shall not be reimbursed for, and shall not include as an item of overhead, the cost of insurance, or any provision for a reserve, covering the risk of loss of or damage to the Government Property, except to the extent that Lockheed may have required Contractor to carry such insurance under any other provision of this subcontract.

(iii) Upon the happening of loss or destruction of or damage to the Government Property, Contractor shall notify Lockheed and the Contracting Officer thereof, and shall communicate with the Loss and Salvage Organization, if any, now or hereafter designated by the Contracting Officer, and with the assistance of the Loss and Salvage Organization so designated (unless the Contracting Officer has designated that no such organization be employed), shall take all reasonable steps to protect the Government Property from further damage, separate the damaged and undamaged Government Property, put all the Government Property in the best possible order, and furnish to Lockheed and the Contracting Officer a statement of (A) the lost, destroyed and damaged Government Property, (B) the time and origin of the loss, destruction or damage, (C) all known interest in the commingled property of which the Government Property is a part, and (D) the insurance, if any, covering any part of or interest in such commingled property. Contractor shall make repairs and renovations of the damaged Government Property or take such other action as Lockheed directs.

(iv) In the event Contractor is indemnified, reimbursed, or otherwise compensated for any loss or destruction of or damage to the Government Property, it shall use the proceeds to repair, renovate or replace the Government Property

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involved, or shall credit such proceeds against the cost of the work covered by the subcontract, or shall otherwise reimburse Lockheed or the Government, as directed by Lockheed. Contractor shall do nothing to prejudice the Government's right to recover against third parties for any such loss, destruction or damage and, upon the request of Lockheed or the Contracting Officer, shall, at Lockheed's or the Government's expense, furnish to the Government and Lockheed all reasonable assistance and cooperation (including the prosecution of suit and the execution of instruments of assignment in favor of the Government) in obtaining recovery. In addition, where a lower-tier subcontractor has not been relieved from liability for any loss or destruction of or damage to Government Property, Contractor shall enforce liability of the lower-tier subcontractor for such loss or destruction of or damage to the Government Property for the benefit of the Government.

g. Lockheed and the Government shall at all reasonable times have access to the premises where any of the Government Property is located.

h. The Government Property shall remain in the possession of Contractor for such period of time as is required for the performance of this subcontract unless Lockheed or the Contracting Officer determines that the interests of the Government require removal of such property. In such case Contractor shall promptly take such action as Lockheed or the Contracting Officer may direct with respect to the removal and shipping of Government Property. In any such instance, the subcontract may be amended to accomplish an equitable adjustment in the terms and provisions thereof.

i. Upon the completion of this subcontract, or at such earlier date as may be fixed by Lockheed or the Contracting Officer, Contractor shall submit to Lockheed, in acceptable form, inventory schedules covering all items of the Government Property not consumed in the performance of this subcontract (including any resulting scrap), or not theretofore delivered to Lockheed or the Government, and shall deliver or make such other disposal of the Government Property as may be directed by Lockheed or the Contracting Officer. Recoverable scrap shall be reported in accordance with a procedure and in such form as Lockheed or the Contracting Officer may direct. The net proceeds of any such disposal approved by Lockheed or the Contracting Officer shall be credited to the cost of the work covered by the subcontract or shall be paid in such manner as Lockheed or the Contracting Officer may direct.

j. Unless otherwise provided herein, Lockheed or the Government shall not be under any duty or obligation to restore or rehabilitate or to pay the costs of the restoration or rehabilitation of Contractor's plant or any portion thereof which is affected by the removal of any Government Property.

k. Directions of Lockheed and the Contracting Officer and communications of Contractor issued pursuant to this article shall be in writing.

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ARTICLE 23 - PRIORITIES, ALLOCATIONS AND ALLOTMENTS

Contractor agrees, in the procurement and use of materials required for the performance of this subcontract, to comply with the provisions of all applicable rules and regulations of the Business and Defense Services Administration, including Defense Materials System regulation.

ARTICLE 24 - OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress, or Resident Commissioner, shall be admitted to any share or part of this subcontract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this subcontract if made with a corporation for its general benefit.

ARTICLE 25 - INDEPENDENT CONTRACTOR

It is understood and agreed that Contractor shall be deemed to be an independent contractor in all its operations and activities hereunder; and that the employees furnished by Contractor to perform work on this project shall be deemed to be Contractor's employees exclusively without any relation whatever to Lockheed as employees or as independent contractors; that said employees shall be paid by Contractor for all services in this connection; that Contractor shall carry workmen's compensation insurance and that Contractor shall be responsible for all obligations and reports covering social security, unemployment insurance, workmen's compensation, income tax, and other reports and deductions required by State and/or Federal law.

ARTICLE 26 - PATENT RIGHTS

a. As used in this article, the following terms shall have the meanings set forth below:

- (1) The term "Subject Invention" means any invention, improvement or discovery (whether or not patentable) conceived or first actually reduced to practice either--
 - (A) in the performance of the experimental, developmental, or research work called for or required under this subcontract, or
 - (B) in the performance of any experimental, developmental, or research work relating to the subject matter of this subcontract which was done upon an understanding in writing that a subcontract would be awarded; provided that the term "Subject Invention" shall not include any invention which is specified in said purchase order as being excluded from the license granted by this article.

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- (ii) The term "Technical Personnel" means any person employed by or working under contract with Contractor (other than a subcontractor whose responsibilities with respect to rights accruing to the Government in inventions arising under subcontracts are set forth in paragraphs (g), (h), and (i) of this article) who, by reason of the nature of his duties in connection with the performance of this subcontract, would reasonably be expected to make inventions.
- (iii) The terms "subcontract" and "subcontractor" mean any subcontract or subcontractor of Contractor, and any lower-tier subcontract or subcontractor under this subcontract.

b. (1) Contractor agrees to and does hereby grant to Lockheed and the Government an irrevocable, nonexclusive, nontransferable, and royalty-free license to practice, and cause to be practiced by or for Lockheed and the United States Government, throughout the world, each Subject Invention in the manufacture, use and disposition according to law, of any article or material, and in the use of any method. No license granted herein shall convey any right to the Government to manufacture, have manufactured, or use any Subject Invention for the purpose of providing services or supplies to the general public in competition with Contractor or Contractor's commercial licensees in the licensed field.

(2) With respect to:

- (i) any Subject Invention made by other than Technical Personnel;
- (ii) any Subject Invention conceived prior to, but first actually reduced to practice in the course of, any of the experimental, developmental, or research work specified in (a) (i) above; and
- (iii) the practice of any Subject Invention in foreign countries; the obligation of Contractor to grant a license as provided in (b) (1) above, to convey title as provided in (d) (ii) (B) or (d) (iv) below, and to convey foreign rights as provided in (e) below, shall be limited to the extent of Contractor's right to grant the same without incurring any obligation to pay royalties or other compensation to others solely on account of said grant. Nothing contained in this Patent Rights article shall be deemed to grant any license under any invention other than a Subject Invention.

c. Contractor shall furnish to the Contracting Officer through Lockheed the following information and reports concerning Subject Inventions which reasonably appear to be patentable:

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- (i) a written disclosure promptly after conception or first actual reduction to practice of each such Invention together with a written statement specifying whether or not a United States patent application claiming the Invention has been or will be filed by or on behalf of Contractor:
- (ii) Interim reports, at least every twelve months, commencing with the date of this subcontract, each listing all such inventions conceived or first actually reduced to practice more than three months prior to the date of the report, and not listed on a prior interim report, or certifying that there are no such unreported inventions; and
- (iii) prior to final settlement of this subcontract, a final report listing all such inventions including all those previously listed in interim reports.

d. In connection with each Subject Invention referred to in (c) (i) above, Contractor shall do the following:

- (i) if Contractor specifies that a United States patent application claiming such invention will be filed, Contractor shall file or cause to be filed such application in due form and time; however, if Contractor, after having specified that such an application would be filed, decides not to file or cause to be filed said application, Contractor shall so notify the Contracting Officer through Lockheed at the earliest practicable date and in any event not later than eight months after first publication, public use or sale.
- (ii) if Contractor specifies that United States patent application claiming such invention has not been filed and will not be filed (or having specified that such an application will be filed thereafter notifies the Contracting Officer with copies to Lockheed to the contrary), Contractor shall:
 - (A) inform the Contracting Officer through Lockheed in writing at the earliest practicable date of any publication of such invention made by or known to Contractor or, where applicable, of any contemplated publication by Contractor, stating the date and identity of such publication or contemplated publication; and
 - (B) convey to the Government the Contractor's entire right, title, and interest in such invention by delivering to the Contracting Officer through Lockheed upon written request such duly executed instruments (prepared by the Government) or assignment and application, and such other papers as are deemed necessary to vest in the Government Contractor's right, title, and interest aforesaid, and the right to apply for and prosecute patent applications covering such invention throughout the world, subject, however, to the right of the Contractor specified

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in (e) below to file foreign applications, subject to the reservation of the license granted by Contractor to Lockheed pursuant to paragraph (b) of this article, and subject further to the reservation of a nonexclusive and royalty-free license to Contractor (and to its existing and future associated and affiliated companies, if any, within the corporate structure of which Contractor is a part) which license shall be assignable to the successor of that part of Contractor's business to which such Invention pertains;

- (iii) Contractor shall furnish promptly to Lockheed and the Contracting Officer on request an irrevocable power of attorney to inspect and make copies of each United States patent application filed by or on behalf of Contractor covering any such invention;
- (iv) in the event Contractor, or those other than the Government deriving rights from Contractor, elects not to continue prosecution of any such United States patent application filed by or on behalf of Contractor, Contractor shall so notify the Contracting Officer via Lockheed not less than sixty days before the expiration of the response period and, upon written request, deliver to the Contracting Officer through Lockheed such duly executed instruments (prepared by the Government) as are deemed necessary to vest in the Government Contractor's entire right, title, and interest in such invention and the applications, subject to the reservations as specified in (d) (ii) above; and
- (v) Contractor shall deliver to Lockheed and the Contracting Officer duly executed instruments fully confirmatory of any license rights herein agreed to be granted to Lockheed and the Government.

e. Contractor, or those other than the Government deriving rights from Contractor, shall have the exclusive rights to file applications on Subject Inventions in each foreign country within:

- (i) nine months from the date a corresponding United States application is filed;
- (ii) six months from the date permission is granted to file foreign applications where such filing had been prohibited for security reasons;
- (iii) such longer period as may be approved by the Contracting Officer. Contractor shall, upon written request of the Contracting Officer through Lockheed, convey to the Government

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Contractor's entire right, title and interest in each Subject Invention in each foreign country in which an application has not been filed within the time above specified, subject to the reservation of a nonexclusive and royalty-free license to Contractor and Lockheed together with the right of Contractor and Lockheed to grant sublicenses, which license and right shall be assignable to the successor to that part of Contractor's or Lockheed's business to which the Subject Invention pertains.

f. Contractor shall exert all reasonable effort in negotiating for the inclusion of this Patent Rights clause in any subcontract hereunder of three thousand dollars (\$3,000) or more having experimental, developmental, or research work as one of its purposes. In the event of refusal by a subcontractor to accept the Patent Rights clause, Contractor shall not proceed with the subcontract without written authorization of Lockheed, and upon obtaining such authorization, shall cooperate with Lockheed in the negotiation with such subcontractor of an acceptable patent rights clause; provided, however, that Contractor shall in any event require the subcontractor to grant the Government and Lockheed patent rights under Subject Inventions of no less scope and on no less favorable terms than those which Contractor has under such subcontracts, except that in no event shall the subcontractor be required to grant to Lockheed and the Government patent rights in excess of those herein agreed to be granted to Lockheed and the Government by Contractor.

g. Contractor shall, at the earliest practicable date, notify the Contracting Officer and Lockheed in writing of any subcontract, containing a patent rights clause, furnish the Contracting Officer and Lockheed a copy of such clause, and notify the Contracting Officer and Lockheed when such subcontract is completed. It is understood that with respect to such subcontract clause, Lockheed and the Government are third party beneficiaries; and Contractor hereby assigns to the Government and Lockheed all the rights that Contractor would have to enforce the subcontractor's obligations for the benefit of the Government and Lockheed with respect to Subject Inventions. Contractor shall not be obligated to enforce the agreements of any subcontractor hereunder relating to Subject Inventions.

h. When Contractor shows that it has been delayed in the performance of this subcontract by reason of its inability to obtain in accordance with (f) above a suitable patent rights clause from a qualified subcontractor for any item or service required under this subcontract for which Contractor itself does not have available facilities or qualified personnel Contractor's delivery dates shall be extended for a period of time equal to the duration of such delay; and, upon request of Contractor, Lockheed shall determine to what extent, if any, an additional extension of the delivery dates and an increase in contract prices based upon additional costs incurred by such delay are proper under the circumstances; and the subcontract shall be modified accordingly. If Contractor, after exerting all reasonable effort, is unable to obtain a qualified subcontractor as set forth above, Contractor may submit to Lockheed a written request for waiver or modification of the requirement that a suitable patent rights clause be

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included in the subcontract. Such request shall specifically state that Contractor has used all reasonable effort to obtain such qualified subcontractor, and shall cite the waiver or termination provision hereinafter set forth. If, within thirty-five (35) days after the date of receipt of such request for a waiver or modification of said requirement, Lockheed shall fail to deny in writing such request, the requirement shall be deemed to have been waived by Lockheed. If within such period "Contractor shall receive a written denial of such request by Lockheed, this subcont act shall thereupon automatically terminate and the rights and obligations of the parties shall be governed by the provisions of the article of this subcontract entitled "Termination".

i. Contractor shall, prior to final payment, furnish Lockheed with the following:

- (i) A list of all patents, if any, issued on Subject Inventions under this subcontract;
- (ii) A list of all Subject Inventions, if any, not yet reduced to a patent but which are or will be the subject of a patent application;
- (iii) A statement that there are no patented or patentable Subject Inventions if, in fact, there are none.

ARTICLE 27 - FILING OF PATENT APPLICATIONS

a. Before filing or causing to be filed a patent application disclosing any subject matter of this subcontract, which subject matter is classified "Secret" or higher, Contractor shall, citing the thirty (30) day provision below, transmit the proposed application through Lockheed to the Contracting Officer for determination whether, for reasons of national security, such application should be placed under an order of secrecy or sealed in accordance with the provisions of 35 U. S. Code 181-188 or the issuance of a patent should be otherwise delayed under pertinent statutes or regulations; and Contractor shall observe any instructions of the Contracting Officer with respect to the manner of delivery of the patent application to the U. S. Patent Office for filing, but Contractor shall not be denied the right to file such patent application. If the Contracting Officer shall not have given any such instructions within thirty (30) days from the date of mailing or other transmittal of the proposed application, Contractor may file the application.

b. Contractor shall furnish to Lockheed and the Contracting Officer, at the time of or prior to the time when Contractor files or causes to be filed a patent application disclosing any subject matter of this subcontract, which subject matter is classified "Confidential", a copy of such application should be placed under an order of secrecy or the issuance of a patent should be otherwise delayed under pertinent statutes or regulations.

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c. In filing any patent application coming within the scope of this article, Contractor shall observe all applicable security regulations covering the transmission of classified subject matter.

ARTICLE 28 - NOTICE AND ASSISTANCE REGARDING PATENT INFRINGEMENT

a. Contractor shall report to Lockheed, promptly and in reasonable written detail, each notice or claim of patent infringement based on the performance of this subcontract, or any subcontract hereunder of which Contractor has knowledge.

b. In the event of litigation against the Government and/or Lockheed on account of any claim of infringement arising out of the performance of this subcontract or out of the use of any supplies furnished or services performed hereunder, Contractor agrees that it will furnish to the Government and/or Lockheed, upon request, all evidence and information in its possession pertaining to such litigation. Such evidence and information shall be furnished at the expense of the Government and/or Lockheed, except in those cases in which Contractor has agreed to indemnify the Government and/or Lockheed against the claim being asserted.

✖ ARTICLE 29 - REPORTING OF ROYALTIES

If this contract is in an amount which exceeds \$10,000, the Contractor agrees to report in writing to Lockheed, during the performance of this contract and prior to its completion or final settlement, the amount of any royalties or royalty rates paid or to be paid by it directly to others in connection with the performance of this contract, together with the names and addresses of licensors to whom such payments are made and either the patent numbers involved or such other information as will permit identification of the patents or other basis on which royalties are to be paid. If this contract is in an amount which exceeds \$10,000, and no royalties or royalty rates are paid or to be paid directly to others under the circumstances set forth above, the Contractor agrees so to report in writing to Lockheed prior to completion or final settlement of this contract.

✖ ARTICLE 30 - PAYMENT OF ROYALTIES

Payments by Contractor of any sum for royalties or patent rights not included in the ordinary purchase price of standard commercial supplies shall not constitute items of allowable cost hereunder, unless and until approved by Lockheed and the Contracting Officer. Reimbursement to Contractor on account of any such payments shall not be construed as an admission by Lockheed and/or the Government of the enforceability, validity or scope of, or title to any of the patents involved, nor shall any such reimbursement constitute a waiver of any rights or defenses respecting such patents.

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ARTICLE 31 - AUTHORIZATION AND CONSENT

The prime contract under which this is a subcontract contains a section in which the Government gives authorization and consent with respect to patented inventions, as follows:

"AUTHORIZATION AND CONSENT - - The Government hereby gives its authorization and consent for all use and manufacture of any patented invention in the performance of this contract or any part hereof or any amendment hereto or any subcontract hereunder (including any lower-tier subcontract)."

✖ ARTICLE 32 - EXCESS PROFIT

The Contractor agrees that, unless otherwise provided by law, this contract shall be subject to all the provisions of 10 U.S.C. 2382 and 7300 and shall be deemed to contain all the agreements required by those sections; provided, however, that this clause shall not be construed to enlarge or extend by contract the obligations imposed by those section. The Contractor agrees to insert in the subcontracts specified in those sections either the provisions of this clause or the provisions required by those sections.

✖ ARTICLE 33 - RENEGOTIATION

a. To the extent required by law, this contract is subject to the Renegotiation Act of 1951 (P.L. 9, 82d Cong., 65 Stat 7) as amended (P.L. 764, 83d Cong., 68 Stat. 1116; P.L. 216, 84th Cong., 69 Stat 447), and to any subsequent act of Congress providing for the renegotiation of contracts. Nothing contained in this clause shall impose any renegotiation obligation with respect to this contract or any subcontract hereunder which is not imposed by an act of Congress heretofore or hereafter enacted. Subject to the foregoing this contract shall be deemed to contain all the provisions required by Section 104 of the Renegotiation Act of 1951, and by any such other act, without subsequent contract amendment specifically incorporating such provisions.

b. The Contractor agrees to insert the provisions of this clause, including this paragraph b, in all subcontracts, as that term is defined in section 103g of the Renegotiation Act of 1951 or in any subsequent act of Congress providing for the renegotiation of contracts.

ARTICLE 34 - MILITARY SECURITY REQUIREMENTS

a. The provisions of this article shall apply to the extent that this subcontract involves access to information classified "Confidential" including "Confidential--Modified Handling Authorized" or higher.

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b. Lockheed shall notify Contractor of the security classification of this subcontract and the elements thereof, and of any subsequent revisions in such security classification, by the use of a Security Requirements Check List (DD Forms 254 and 254-1).

c. To the extent Lockheed has indicated as of the date of this subcontract, or thereafter indicates, security classification under this subcontract as provided in paragraph (b) above, Contractor shall safeguard all classified elements of this subcontract and shall provide and maintain a system of security controls within its own organization in accordance with the requirements of:

- (i) the Security Agreement (DD Form 441), including the Department of Defense Industrial Security Manual for Safeguarding Classified Information as in effect on the date of this subcontract, and any modification to the Security Agreement for the purpose of adapting the Manual to Contractor's business; and
- (ii) any amendments to said Manual made after the date of this subcontract, notice of which has been furnished to Contractor by the Security Office of the Military Department having security cognizance over the facility.

d. Representatives of the Military Department having security cognizance over the facility and representatives of the contracting Military Department shall have the right to inspect at reasonable intervals the procedures, methods, and facilities utilized by Contractor in complying with the security requirements under this subcontract. Should the Government, through these representatives, determine that Contractor is not complying with the security requirements of this subcontract Contractor shall be informed in writing by the Security Office of the cognizant Military Department of the proper action to be taken in order to effect compliance with such requirements.

e. If subsequent to the date of this subcontract, the security classifications or security requirements under this subcontract are changed by the Government as provided in this article and if such change causes an increase or decrease in the estimated cost of the performance of this subcontract, the estimated cost and fixed fee shall, to the extent appropriate, be subject to an equitable adjustment. Any such equitable adjustment shall be accomplished in the manner set forth in the changes article of this subcontract.

f. Contractor agrees to insert, in all subcontracts hereunder which involve access to classified information, provisions which shall conform substantially to the language of this article, including this paragraph.

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g. Contractor also agrees that it shall determine that any subcontractor proposed by it for the furnishing of supplies and services which will involve access to classified information in Contractor's custody has been granted an appropriate facility security clearance, which is still in effect, prior to being accorded access to such classified information.

ARTICLE 35 - NEW FEATURES OF DESIGN

In the event Contractor, prior to completion of work hereunder, develops (i) any improvement in the design of the supplies called for by this subcontract, which is not incorporated in the supplies delivered hereunder, or (ii) any alternative or improved method of accomplishing the objectives of this subcontract, which is not employed in the performance hereof, Contractor shall promptly give full information with respect thereto to Lockheed.

ARTICLE 36 - REPORTS OF WORK

Contractor shall submit reports making full disclosure of all services done and the results hereof, in the manner, at the times and to the extent set forth in said purchase order; provided, however, that except as may be otherwise specified in said purchase order, Contractor shall submit such reports in triplicate from time to time as requested and upon completion (or earlier termination) of the services. Except as may be otherwise specified in said purchase order, or unless Contractor is otherwise instructed, Contractor shall, upon completion (or earlier termination) of the services, deliver any working drawings and specifications of such prototypes as may have been developed.

ARTICLE 37 - RIGHTS IN DATA - UNLIMITED

a. The term "Subject Data" as used herein includes writings, sound recordings, pictorial reproductions, drawings or other graphical representations, and works of any similar nature (whether or not copyrighted) which are specified to be delivered under this contract. The term does not include financial reports, cost analyses and other information incidental to contract administration.

b. Subject to the proviso of c. below, the Government and Lockheed may duplicate, use, and disclose in any manner and for any purpose whatsoever, and have others so do, all Subject Data delivered under this contract.

c. Contractor agrees to and does hereby grant to the Government, and to its officers, agents, and employees acting within the scope of their official duties, and to Lockheed, a royalty-free, non-exclusive and irrevocable license throughout the world, to publish, translate, reproduce, deliver, perform, dispose of, and to authorize others so to

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do, all Subject Data now or hereafter covered by copyright; provided that with respect to such Subject Data not originated in the performance of this contract but which is incorporated in the work furnished under this contract such license shall be only to the extent that Contractor, its employees, or any individual or concern specifically employed or assigned by Contractor to originate and prepare such Data under this contract, now has, or prior to completion or final settlement of this contract may acquire, the right to grant such license without becoming liable to pay compensation to others solely because of such grant.

d. Contractor shall exert all reasonable effort to advise Lockheed, at the time of delivery of the Subject Data furnished under this contract, of all invasions of the right of privacy contained therein and of all portions of such Data copied from work not composed or produced in the performance of this contract and not licensed under this clause.

e. Contractor shall report to Lockheed promptly and reasonable written detail, each notice or claim of copyright infringement received by Contractor with respect to all Subject Data delivered under this contract.

f. Nothing contained in this clause shall imply a license to the Government or Lockheed under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Government or Lockheed under any patent.

g. Contractor shall not affix any restrictive markings upon any Subject Data, and if such markings are affixed, the Government or Lockheed shall have the right at any time to modify, remove, obliterate or ignore any such marking.

ARTICLE 38 - REPRODUCTION RIGHTS

Lockheed does not grant or convey to Contractor by virtue of this subcontract (i) any reproduction rights in or to the articles called for hereunder, or (ii) any right to use designs, drawings or other information belonging to Lockheed or supplied by or on behalf of Lockheed for us in the performance of this subcontract, in the production, manufacture or design of any articles or materials for anyone other than Lockheed.

ARTICLE 39 - NON-DISCLOSURE OF INFORMATION

Contractor shall not, without the prior written consent of Lockheed, disclose information relative to this subcontract, except as may be required to insure performance..

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ARTICLE 40 - FEDERAL, STATE AND LOCAL TAXES

Except as otherwise provided in this subcontract, Federal, State, and Local taxes (other than (i) Federal taxes on income and excell profits, (ii) taxes in connection with financing, refinancing, or refunding operations, and (iii) Federal excise taxes from which exemption is obtainable under Sections 4220 or 4222 of the Internal Revenue Code or for which a credit is obtainable under Section 6416 (b) (3) (B) thereof) paid by Contractor, of any cost of cost-plus-a-fixed-fee subcontractor hereunder (provided that there was no fixed-price subcontractor intervening between such subcontractor and Contractor) and incident to the performance of this subcontract shall constitute items of allowable cost under this subcontract or such cost or cost-plus-a-fixed-fee subcontract if (i) Contractor has requested Lockheed to furnish tax exemption certificates or other similar evidence of exemption for use by Contractor and such cost or cost-plus-a-fixed-fee subcontractor in obtaining exemption from such Federal, State or Local Taxes and (ii) Lockheed has notified Contractor that it will not furnish such evidence of exemption. Payments of taxes for which evidence of exemption has been furnished hereunder shall constitute items of allowable cost under this subcontract (i) if the applicable Federal, State or Local taxing authorities have refused to accept such evidence of exemption and Contractor has notified Lockheed of such refusal, (ii) if Contractor has caused the tax in question to be paid in such manner as to preserve all rights to refund thereof, (iii) if Contractor causes to be assigned to the Government any and all rights to any refund of such taxes and (iv) if being so directed by the Contracting Officer, Contractor takes the necessary action in cooperation with and for the benefit of the Government, to secure a refund of such tax.

ARTICLE 41 - AMENDMENTS REQUIRED BY PRIME CONTRACT

Contractor agrees that upon the request of Lockheed it will from time to time enter into amendments to this subcontract to incorporate additional provisions herein or to change provisions hereof, as Lockheed may reasonably deem necessary, in order to comply with the provisions of the prime contract or with the provisions of amendments to the prime contract. If any such amendment to this subcontract causes an increase or decrease in the cost of, or the time required for, performance of this subcontract, an equitable adjustment shall be made in the estimated cost and fixed fee or delivery schedule, or both, pursuant to Article 3 (Changes) hereof.

ARTICLE 42 - COVENANT AGAINST CONTINGENT FEES

Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this subcontract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by Contractor for the purpose of securing business.

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For breach or violation of this warranty Lockheed shall have the right to annul this subcontract without liability or, in its discretion, to deduct from the subcontract price of consideration the full amount of such commission, percentage, brokerage or contingent fee.

ARTICLE 43 - QUALITY CONTROL SPECIFICATION

Except as otherwise provided in this subcontract, Contractor's system of quality control during the performance of this subcontract shall be in accordance with the provisions of Military Specification MIL-Q-5923, as in effect on the date of this subcontract.

ARTICLE 44 - GRATUITIES

a. Lockheed may, by written notice to Contractor, terminate the right of Contractor to proceed under this contract if Lockheed has a reasonable cause to believe that gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by Contractor, or any agent or representative of Contractor, to any officer or employee of Lockheed with a view toward securing a contract or securing favorable treatment with respect to the awarding or amendment, or the making of any determination with respect to the performing of such contract.

b. In the event this contract is terminated as provided in paragraph a. hereof, Lockheed shall be entitled to pursue the same remedies against Contractor as it could pursue in the event of a breach of the contract by Contractor.

c. The rights and remedies of Lockheed provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

ARTICLE 45 - DELAY IN DELIVERY OF DATA

a. It is understood that the efficient use by Lockheed of the supplies called for hereunder requires that the data called for hereunder be delivered not later than the time or respective times herein specified. If such data are not delivered at said time or times, Lockheed may, at its election, so long as such data remain undelivered, unless the delay in delivery thereof arises out of causes beyond the control and without the fault or negligence of Contractor within the meaning of the clause hereof entitled "Excusable Delays", withhold payment to Contractor for any of the amounts then due, refuse approval of Contractor's vouchers and refuse to accept further deliveries hereunder from Contractor or take any other action authorized by law or regulation now or hereafter in effect, including termination of the contract for default to the extent and in the manner authorized by "Termination," and may take any or all of the foregoing actions separately or in combination.

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b. The provisions of this clause shall only be applicable to technical data, such as handbooks, service manuals, or other information necessary for the proper maintenance or servicing of the end items called for herein.

ARTICLE 46 - LIMITS OF CONTRACT

This contract supersedes all prior offers, negotiations or agreements concerning the subject matter hereof and constitutes the entire contract between the parties.

ARTICLE 47 - ADVANCE MANUFACTURE AND SHIPMENT

Contractor shall not, without Lockheed's prior written consent, manufacture in advance of Contractor's normal flow time or deliver in advance of schedule. Lockheed may return, shipping charges collect, all articles received in advance of schedule.

ARTICLE 48 - INTERPRETATION

This subcontract shall be construed and interpreted solely in accordance with the laws of the State of California.

ARTICLE 49 - APPROVAL

This subcontract shall not become effective until approved by the Contracting Officer at Lockheed's Plant.

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ARTICLE 50 - ALTERATIONS

TYPOGRAPHICAL ERRORS

1. Article 8 - Inspection And Correction Of Defects
Page 9, Paragraph d, line 8, 3rd word, delete "has"
and substitute "have".
2. Article 10 - Assignment Of Claims
Page 10, Paragraph c, line 9, 1st word, delete
tpgetjer" and substitute "together".
3. Article 11 - Records
Page 12, Paragraph e, line 3, add the word "to"
after the word "obligation".
4. Article 26 - Patent Rights
Page 26, Paragraph d (11) (A), line 3, 5th word,
delete "know" and substitute "known".
5. Article 27 - Filing of Patent Applications
Page 29, Paragraph a, line 6, 9th word, delete "of"
and substitute "or".
6. Article 36 - Reports of Work
Page 33, line 2, 6th word, delete "hereof" and substitute
"thereof".
7. Article 37 - Rights in Data - Unlimited
Page 34, Paragraph e, line 1, add the word "in" after
the word "and".

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The foregoing Terms and Conditions are changed as follows:

Article 50 ("Alterations"):

8. Article 6 - Payment and Reimbursement

Page 6, Sub-paragraph (b), line 5, delete the word and figure "Article 29" and substitute the word and figure "Article 26" therefor.

9. Article 6 - Payment and Reimbursement

Page 5, Sub-paragraph (b), line 15, delete the words "Article (CHANGES)" and substitute the words and figure "Article 3 (CHANGES)" therefor.

10. Article 15 - Excusable Delays

Page 18, Sub-paragraph (b), line 1, delete the word "cuase" and substitute the word "cause" therefor.

11. Article 22 - Government Property

Page 21, Sub-paragraph (c), line 4, delete the word "personality" and substitute the word "personalty" therefor.

12. Article 22 - Government Property

Page 22, Sub-paragraph (f), lines 1 and 3, delete the letter "(d)" and substitute the letter "(e)" therefor.

13. Article 26 - Patent Rights

Page 29, Sub-paragraph (h), line 8, delete the word "subcontact" and substitute the word "subcontract" therefor.

14. Article 40 - Federal, State and Local Taxes

Page 35, line 2, delete the word "excell" and substitute the word "excess" therefor.

15. Article 1 - ("PROVISIONS APPLICABLE TO SERVICES AND SUPPLIES TO BE FURNISHED") shall be amended as follows:

a. Sub-paragraph (a) - Delete the words and figures "fifteen (15) days" appearing in line 10 therein and substitute the words and figures "thirty (30) days" therefor.

b. Sub-paragraph (c) - Delete the word "includes" appearing in line 1 therein and substitute the words "shall include".

16. Article 3 - ("CHANGES") shall be amended as follows:

Delete the figure and word "30 days" appearing in line 8, page 3 therein, and substitute the figure and word "60 days" therefor.

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17. Article 4 - ("LIMITATION OF ALLOWABLE COSTS") shall be amended to read as follows:

"a. It is estimated that the total cost to Lockheed, exclusive of any fixed fee, for the performance of this subcontract will not exceed the estimated cost set forth in said purchase order. Contractor agrees to use its best efforts to perform the work specified in said purchase order and all obligations under this subcontract within such estimated cost. The fixed fee for complete performance of this subcontract is specified in said purchase order.

b. The sum presently available for payment, and allotted to this subcontract, is specified in said purchase order. It is anticipated that from time to time additional funds will be allotted to this subcontract up to the full estimated cost, including any fixed fee. Lockheed shall not be obligated to reimburse Contractor for costs incurred, including any fixed fee to which Contractor may be entitled, in excess of the total amount from time to time allotted to this subcontract, and Contractor shall not be obligated to continue performance under this subcontract or to incur costs, including any fixed fee to which Contractor may be entitled, in excess of the total amount from time to time allotted to this subcontract. When and to the extent that the total amount allotted to this subcontract has been increased, any costs, including any fixed fee to which Contractor may be entitled, incurred by Contractor prior to the increase and in excess of the amount previously allotted, shall be allowable to the same extent as if such costs had been incurred after such increase in amount allotted.

c. If at any time Contractor has reason to believe that the costs which it expects to incur in the performance of this subcontract in the next succeeding thirty (30) days, when added to all costs previously incurred, including any fixed fee to which Contractor may be entitled, will exceed eighty-five per cent (85%) of the amount then allotted to this subcontract, Contractor will so notify Lockheed. If at any time Contractor has reason to believe that the total cost to Lockheed, exclusive of any fixed fee, for performance of this subcontract will be substantially greater or less than the estimated cost set forth in said purchase order, Contractor shall so notify Lockheed in writing to that effect, giving its revised estimate of such total cost for performance hereunder.

d. If Lockheed determines that the amount allotted to this subcontract has been expended and that no additional amount will be allotted to this subcontract, Lockheed shall terminate this subcontract as may be determined necessary pursuant to sub-paragraph a(iii) of Article 14 (TERMINATION) hereof.

e. In the event that sufficient amounts are not allotted to this subcontract to allow completion of the work contemplated herein, Contractor shall be entitled, subject to the limitations of paragraph b of this article, to a percentage of the fixed fee set forth in said purchase order equivalent to the percentage of completion of the work contemplated by this subcontract."

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18. Article 5 - ("ALLOWABLE COSTS AND FIXED FEE") shall be amended to read as follows:

"a. Lockheed shall pay to Contractor, at the time and in the manner hereinafter set forth, for all services and supplies to be furnished hereunder the allowable costs therefore determined as hereinafter set forth in paragraph (b) of this article, plus the fixed fee specified in the subcontract. If Lockheed, because of the requirement of the Government, or for any other reasons, accepts services or supplies under this subcontract which do not conform to the guarantees set forth in Article 8 (Inspection and Correction of Defects) hereof, Lockheed shall pay the allowable costs as hereinafter defined of furnishing and delivering such services and supplies, subject to the provisions of said Article 8. The total estimated cost and fixed fee shall be subject to increases and decreases resulting from changes or additions as provided in Article 3 (Changes) hereof, or from changes in the scope or nature of the work to be performed under this subcontract which are agreed to by Contractor and Lockheed in writing.

b. For the purpose of determining the amounts payable to the Contractor under this subcontract, allowable items of cost will be determined in accordance with generally accepted accounting principles and practices of the Contractor which are in accordance with Part 2 of Section XV of the Armed Services Procurement Regulation as in effect on the date of this subcontract. It is understood and agreed that to the extent such costs are accepted as allowable costs by the Contracting Officer, the following shall be considered as allowable items of cost under this subcontract when properly allocable to the subcontract and incurred or paid by the Contractor in accordance with this subcontract provided, however, that no costs shall be disallowed by Lockheed on the basis that such work is not authorized by Lockheed's prime contract if such work is authorized by Lockheed in connection with this subcontract.

(1) All materials and supplies (excluding special purpose machinery and equipment) acquired or produced by the Contractor in reasonable quantity for use in the performance of the work under this subcontract. The Contractor shall be free but not obligated to use any articles customarily produced or assembled by the Contractor in the regular course of its business provided that such articles are billed in accordance with its established intracompany buying practice.

(2) Purchase and installation of special purpose machinery and equipment necessary for the performance of this subcontract as excluded in (1) above, and not required in the normal course of the Contractor's business in excess of \$500.00 for any single purchase shall be subject to the prior written approval of Lockheed, provided that such purchases in excess of the previous stated amount made by the Contractor may be ratified and approved subsequent to such purchase.

(3) All labor, usually termed "shop labor" properly chargeable directly to this subcontract, including traveling time and labor directly applicable to inspections, tests, or demonstrations in the

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Contractor's plant and labor directly applicable to packing, crating, boxing, shipment, loading, unloading, dismantling, moving and removing materials, supplies, and equipment, but not including labor covered by Sub-paragraphs (4), (5), (6), or (7) below.

(4) All engineering labor, including all compensation of engineers, scientists, physicists, chemists, draftsmen, technicians, and other salaried employees, other than employees coming within Sub-paragraph (6) below, chargeable directly and properly to this subcontract including travel time but excluding vacation, holiday, sick, personal or military, jury or election duty compensation. In case the full working time of any such employee is not applied to the work contemplated by this subcontract, his compensation shall be included under this sub-paragraph only in proportion to the actual time applied to any such subcontract.

(5) All labor performed under this subcontract in regularly established tool making rooms of the Contractor and all labor chargeable to the cost of constructing, maintaining or replacing machinery, tools, equipment, dies, molds, jigs, gauges, patterns and fixtures which are to be used in the production of items in quantity in connection with the work provided for under this subcontract and which are the property of or which are to become the property of the Government. All labor directly applicable to inspection, test or demonstration outside of the Contractor's plant or applicable to any work incident to such outside inspection, test or demonstration in connection with the work provided for under this subcontract shall be considered to come within the scope of this sub-paragraph. However, no labor performed by employees coming within Sub-paragraph (6) below will be considered to come within the scope of this sub-paragraph.

(6) All labor performed by employees of the Contractor's Research Laboratory and of the Contractor's General Engineering Laboratory (GEL), including travel time, directly and properly chargeable to the work provided for under this subcontract, excepting holiday, vacation, sick, personal or military, jury or election duty compensation.

(a) Premium cost of overtime wage payments shall be allowable items of cost hereunder only if and to the extent that the overtime work for which such payments are made shall be authorized by Lockheed in writing and approved by the Contracting Officer.

(7) There shall be added to the amount of all expenditures for which reimbursement is authorized and paid to the Contractor in accordance with the provisions of this Article, certain negotiated provisional or billing rates providing for indirect expenses. These rates shall be periodically readjusted to final overhead rates as approved by the Government. Billing from other departments within the other operating components of the Contractor shall be at such provisional rates and adjusted to such final rates as are approved by the Government.

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(a) The final overhead rates specified in this Subcontract include provision for the cost of the normal insurance coverages regularly carried by the Contractor but shall not be in excess of that approved by the Government under contracts of a similar nature, but do not include provision for additional insurance, if any, as may be required or approved by Lockheed or the Contracting Officer in connection with contract performance.

(b) For purposes of negotiation of final overhead rates under this paragraph, a proper and reasonable share of Contractor's overall general research and development costs shall be included as an allowable expense if such costs are not directly reimbursable under any other contract.

(c) For purposes of negotiation of final overhead rates and to the extent consistent with the Contractor's policy in its regular operations the cost, including incidental expenses and premium (if any) of providing such death, injury, internment, and other benefits for the Contractor's employees engaged in performing services under this subcontract as Lockheed or the Contracting Officer may approve or require.

(8) Subject to the provisions of the Article 12 hereof entitled "Subcontracts", all payments and expenditures in connection with Subcontracts made for the purpose of performing this subcontract and expenditures for consulting services and to reimburse other employers for services performed by their employees released for or engaged in performance of the work provided for under this subcontract.

(9) To the extent such expenditures are consistently recorded by the Contractor in its regular operations as elements of material costs and to the extent that direct reimbursement for such expenditures under this Article does not represent duplication of payments made pursuant to any other provision of this subcontract, all sales, excise, use, occupational gross receipts, import or export taxes, duties, or imports or other similar taxes or charges and all permits and license fees (but not Federal income and excess profits taxes) required or used in connection with the work provided for under this subcontract subject, however, to the provisions of Article 40 (Federal, State, and Local Taxes).

(10) With the approval of Lockheed, all rentals incurred in connection with the use of special facilities (to the extent such use is permitted under this subcontract) not customarily employed in the Contractor's ordinary operations. It is contemplated by the parties hereto that all such rentals will be for exclusive use hereunder unless the rental costs are equitably adjusted.

(11) To the extent not reimbursable under any facilities contract between the Contractor and the Government, all costs and expenditures, incurred by the Contractor in connection with the storage of any necessary facilities which shall be supplied to the Contractor by Lockheed or the

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Government or acquired by the Contractor hereunder, to carry out the work and which shall be left with the Contractor after completion or termination of the subcontract and all costs, and expenditures incurred by the Contractor before or after such completion or termination in connection with dismantling, moving, boxing, shipping, and transporting such facilities.

(12) Royalties and other costs incurred in the acquisition of necessary patent and technical rights, provided that, in the case of such rights acquired solely for the purpose of carrying out this subcontract, arrangement for the use of such patent and technical rights under such, this subcontract shall be subject to written approval of the Contracting Officer.

(13) All costs and expenses determined to be allowable costs under any other article of this subcontract.

(14) All costs of packing, crating, boxing, markings, tagging, labelling, shipment, transportation, loading, unloading, dismantling, moving, removing, and storage charges on material, supplies and equipment, except such costs as may be covered by Sub-paragraph 17 below.

(15) The cost of reconstructing and replacing any of the work or property lost, destroyed, or damaged, and not covered by insurance (except pursuant to Article 22 hereof entitled, "Government Property") but the Contractor shall not undertake the reconstruction or replacement of property of the Government except with the prior written authorization of Lockheed or the Contracting Officer.

(16) The cost incurred by the Contractor in complying with the provisions of Sub-paragraphs f(i) and f(iii) or Article 22 hereof entitled "Government Property." Agreement may be made on the basis of a negotiated sum therefore in lieu of the actual costs thereof.

(17) To the extent not reimbursable under any facilities contract between Contractor and the Government and subject to the approval of Lockheed or the Contracting Officer all labor, materials, and supplies directly applicable to plant alterations or to rearrangement of plant or facilities in connection with work provided for under this subcontract. No materials or supplies coming within Sub-paragraph (b) 1 above or labor coming within Sub-paragraph (b) 3 above will be considered to come within the scope of this sub-paragraph. Allowable costs under this sub-paragraph shall be treated as items of overhead, in accordance with Contractor's customary accounting procedure.

(18) The term "materials and supplies", as set forth in Sub-paragraph (b) 1 above shall include tools, dies, patterns, molds, jigs, fixtures, gauges, and shall also include materials and supplies purchased for stock and subsequently issued for operations under this subcontract or acquired for the purpose of performing this subcontract and subsequently scrapped for any reason, subject to the provisions of the

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Article 22 hereof entitled, "Government Property", as well as waste resulting from operations under this subcontract.

19. Article 6 - ("PAYMENT AND REIMBURSEMENT") shall be amended as follows:

a. Sub-paragraph (b) - Following the words "and the Contracting Officer.", the following sentence shall be inserted: "Failure to agree to any such adjustment shall be a dispute concerning a question of fact within the meaning of the clause of this contract entitled 'Disputes'."

b. Sub-paragraph (e) shall be deleted.

20. Sub-paragraph (a) (2) of Article 7 ("RELEASE PROVISIONS") shall be amended by deleting the words "(but not including claims based on bodily injury or death or property damage)" in line 4 therein.

21. Article 8 - ("INSPECTION AND CORRECTION OF DEFECTS") shall be amended to read as follows:

a. Sub-paragraph (a) - Following the word "inspect" in line 8 therein, insert the words "the affected portions of".

b. Sub-paragraph (c) - Delete the words and figure "twelve (12) months" appearing in line 2 therein and substitute the words and figure "six (6) months".

22. Article 9 - ("INDEMNIFICATION") shall be deleted.

23. Article 12 - ("SUBCONTRACTS") shall be amended as follows:

a. Sub-paragraph (b) - Delete the word "Lockheed" appearing in line 9 therein and substitute the words "Contracting Officer" therefor.

b. Sub-paragraph (b) - Delete the word "Lockheed" appearing in line 10 therein and substitute the words "Contracting Officer" therefor.

c. Sub-paragraph (b) - Delete the period after the word "basis" appearing in line 9 therein and add the following: ", or (v) involves research and development work."

d. Sub-paragraph (d) - Delete the word "clause" appearing in line 4 therein and substitute the word "article" therefor.

e. The following shall be added as Sub-paragraph (f).

"f. The Contracting Officer may approve all or any part of Contractor's purchasing system and from time to time rescind or reinstate such approval. Such approval shall be deemed to fulfill the requirements for obtaining the Contracting Officer's consent to Subcontracts as prescribed in paragraph (b) above."

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24. Article 14 - ("TERMINATION") shall be amended as follows:

a. Sub-paragraph (a) - Following the word "Lockheed" appearing in line 13 add the words "and/or the Government".

b. Sub-paragraph (c) - Delete the words and figures "twelve (12) months" appearing in lines 4, 7, and 10 therein, and substitute the words and figures "eighteen (18) months" therefor.

c. The following shall be added as Sub-paragraph (j):

"j. Contractor shall have the right of appeal under the article hereof entitled "Disputes", from any decision made by Lockheed under paragraphs c or e above, except that if Contractor has failed to submit its claim within the time provided in paragraph (c) above and has failed to request extension of such time, he shall have no such right of appeal. In any case where Lockheed has made a determination of the amount due under paragraph (c) or (e) above, Lockheed shall pay Contractor the following:

(1) If there is no right of appeal hereunder or if no timely appeal has been taken, the amount so determined by Lockheed; or

(2) If an appeal has been taken, the amount finally determined on such appeal.

25. Article 22 - ("GOVERNMENT PROPERTY") shall be amended as follows:

a. Sub-paragraph (b) - Delete the word "clause" appearing in line 15 therein and substitute the word "article" therefor.

b. Sub-paragraph (c) - Delete the words "a system acceptable to Lockheed" appearing in line 5 therein.

c. Sub-paragraph (c) - Delete the words "the prime contract" appearing in line 9 therein and substitute the words "this Subcontract" therefor.

d. Sub-paragraph (i) shall be amended to read as follows:

"i. Upon the completion of this subcontract, or at such earlier date as may be fixed by Lockheed or the Contracting Officer, Contractor shall submit to Lockheed, in acceptable form inventory schedules covering all items of the Government Property not consumed in the performance of this subcontract (including any resulting scrap), or not theretofore delivered to Lockheed or the Government and shall deliver or make such other disposal of the Government Property as may be directed by Lockheed or the Contracting Officer. Recoverable scrap shall be reported in accordance with a procedure and in such form as Lockheed or the Contracting Officer may direct. The net proceeds of any such disposal approved by Lockheed or the Contracting Officer shall be credited to the cost of the work covered by the subcontract or shall be paid in such manner as Lockheed or the Contracting Officer may direct. For the purpose of the Subcontract, the terms 'resulting scrap' and 'recoverable scrap' shall

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be deemed to include all scrap except material generated as scrap in the usual production process having only a remelting or reprocessing value. For the purpose of establishing a policy and clarifying the intent of the parties with respect to the disposition of scrap other than resulting scrap or recoverable scrap, it is understood and agreed that such scrap need not be physically segregated from Contractor-owned scrap for accounting purposes, it being recognized that the Contractor's method of crediting the proceeds from the disposition of such scrap has been taken into consideration in establishing the estimated cost under this subcontract. Therefore, the Contractor will not be required to render any other accountability for such scrap separately for this subcontract. Title to such scrap shall vest in the Contractor."

26. Article 25 - ("INDEPENDENT CONTRACTOR") shall be amended by deleting the words "that Contractor shall carry workmen's compensation insurance and" appearing in lines 6 and 7 therein.

27. Article 26 - ("PATENT RIGHTS") shall be amended as follows:

a. Sub-paragraph (b) (1) - Delete the sentence beginning with the words "No license granted" appearing in line 6 therein and substitute the following sentence therefor:

"b. (1) No license granted herein shall convey any right to Lockheed or the Government to manufacture, have manufactured, or use any Subject Invention for the purpose of providing services or supplies to the general public in competition with Contractor or Contractor's commercial licensees in the licensed field."

b. Sub-paragraph (k) - Following the word "furnish" appearing in line 1 therein, insert the words "the Contracting Officer through".

28. Article 27 - ("FILING OF PATENT APPLICATIONS") shall be amended as follows:

a. Sub-paragraph (a) - Delete the words "through Lockheed" appearing in line 4 therein.

b. Sub-paragraph (b) - Delete the words "Lockheed and" appearing in line 1 therein.

c. Sub-paragraph (b) - After the word "application" appearing in line 4, insert the words "for determination whether, for reasons for national security, such application".

29. Article 29 - ("REPORTING OF ROYALTIES") shall be deleted.

30. Article 30 - ("PAYMENT OF ROYALTIES") shall be amended by deleting the word "Lockheed" appearing in lines 4 and 6 therein.

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31. Article 32 - ("EXCESS PROFIT") shall be amended as follows:

a. Delete the word "contract" appearing in line 2 therein and substitute the word "subcontract" therefor.

b. Delete the word "clause" appearing in line 4 therein and substitute the word "article" therefor.

c. Delete the word "clause" appearing in lines 4 and 7 therein and substitute the word "article" therefor.

d. Delete the word "section" appearing in line 6 therein and substitute the word "sections" therefor.

32. Article 33 - ("RENEGOTIATION") shall be amended as follows:

a. Sub-paragraph (a) - Delete the word "contract" appearing in lines 1, 6, and 8 therein and substitute the word "subcontract" therefor.

b. Sub-paragraph (a) - Delete the word "clause" appearing in line 5 therein and substitute the word "article" therefor.

c. Sub-paragraph (b) - Delete the word "clause" appearing in line 1 therein and substitute the word "article" therefor.

33. Article 35 - ("NEW FEATURES OF DESIGN") shall be amended to read as follows:

"In the event contractor, prior to completion of work hereunder, and in the performance of the subcontract knowingly develops (i) any improvement of the design of the supplies called for by the subcontract, which is not incorporated in the supplies delivered hereunder, or (ii) any alternative or improved method of accomplishing the work set forth in the statement of work included in this subcontract, which is not implemented in the performance hereof, contractor shall give information with respect thereto to Lockheed."

34. Article 37 - ("RIGHTS IN DATA - UNLIMITED") shall be amended as follows:

a. Sub-paragraph (b) shall be amended to read as follows:

"b. Subject to the proviso of (c) below, the Government may duplicate, use, and disclose in any manner and for any purpose whatsoever, and have others so do, all Subject Data delivered under this contract."

b. Sub-paragraph (c) - Delete the words "and to Lockheed," appearing in line 3 therein.

c. Sub-paragraph (d) - Following the words "advise Lockheed," appearing in line 1 therein, insert the words "and the Contracting Officer".

d. Sub-paragraph (e) - Following the words "to Lockheed" appearing in line 1 therein, insert the words "and the Contracting Officer".

e. Sub-paragraph (g) - Following the words "or Lockheed" appearing in line 2 therein, insert the words "with the approval of the Contracting Officer".

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35. Article 38 - ("REPRODUCTION RIGHTS") - shall be deleted.

36. Article 39 - ("NON-DISCLOSURE OF INFORMATION") shall be amended to read as follows:

"Contractor shall refrain from disclosing to other parties the existence of this subcontract, or any details relating thereto in such a manner as to reveal the existence of this subcontract, except, (i) with the consent of Lockheed, or (ii) to the extent which may be required to insure performance, provided, however, except as may be otherwise provided in Article 34 (Military Security Requirements) hereof, Contractor shall in no event be liable for inadvertent disclosure of any such information where reasonable care commensurate with the effort which Contractor customarily exercises with respect to preservation of its own information, has been taken to prevent such disclosure."

37. Article 41 - ("AMENDMENTS REQUIRED BY PRIME CONTRACT") shall be amended as follows:

a. Delete the words "enter into" appearing in line 2 therein and substitute the word "negotiate" therefor.

38. Article 44 - ("GRATUITIES") shall be amended as follows:

a. Sub-paragraph (a) - Delete the word "contract" appearing in line 2 therein and substitute the word "subcontract" therefor.

b. Sub-paragraph (b) - Delete the word "contract" appearing in lines 1 and 3 therein and substitute the word "subcontract" therefor.

c. Sub-paragraph (c) - Delete the word "contract" appearing in line 3 therein and substitute the word "subcontract" therefor.

d. Sub-paragraph (c) - Delete the word "clause" appearing in line 1 therein and substitute the word "article" therefor.

39. Article 45 - ("DELAY IN DELIVERY OF DATA") shall be amended as follows:

a. Sub-paragraph (a) - Delete the word "clause" appearing in line 7 therein and substitute the word "article" therefor.

b. Sub-paragraph (b) - Delete the word "clause" appearing in line 1 therein and substitute the word "article" therefor.

40. Article 46 - ("LIMITS OF CONTRACT") shall be amended as follows:

a. Delete the word "contract" appearing in line 1 therein and substitute the word "subcontract" therefor.

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41. Said Terms and Conditions shall be further amended by adding the following articles thereto:

a. "ARTICLE 51 - DISPUTES"

Any decision, disapproval or omission made or omitted by Lockheed or the Contracting Officer hereunder concerning question of fact, if disagreed with by Contractor, shall be treated by Lockheed as a dispute under the "Disputes" clause in the prime contract, and Lockheed shall, at Contractor's expense, take all available steps thereunder to the extent required by Contractor to resolve such dispute, except that Lockheed shall not be obligated to litigate the matter in any court. Any resolution of such dispute pursuant to such clause shall be binding upon both parties. Lockheed agrees that it will permit Contractor to participate with Lockheed in all such proceedings. If Lockheed fails to take action pursuant to this article, Contractor may appeal such dispute by pursuing any right or remedy it may have at law or in equity in any court of competent jurisdiction. Pending final decision of any dispute hereunder, Contractor shall proceed diligently with the performance of this subcontract and in accordance with the decision appealed from."

b. "ARTICLE 52 - LIABILITY TO THIRD PERSONS"

a. Contractor shall procure and thereafter maintain workmen's compensation, employer's liability, comprehensive general liability (bodily injury) and comprehensive automobile liability (bodily injury and property damage) insurance with respect to performance under this subcontract, and such other insurance as the Contracting Officer or Lockheed may from time to time require with respect to performance under this subcontract; provided that Contractor, in fulfillment of its obligation to procure workmen's compensation insurance may, with the approval of the Contracting Officer, and pursuant to statutory authority, maintain a self-insurance program. All insurance required pursuant to the provisions of this paragraph shall be in such form in such amounts and for such periods of time, as the Contracting Officer or Lockheed may from time to time require or approve, and with insurers approved by the Contracting Officer.

b. Contractor agrees, to the extent and in the manner required by the Contracting Officer, to submit for the approval of the Contracting Officer any other insurance maintained by Contractor in connection with the performance of the subcontract and for which the Contractor seeks reimbursement hereunder.

c. Contractor shall be reimbursed: (i) for the portion allocable to this subcontract of the reasonable cost of insurance as required or approved pursuant to the provisions of this article, and (ii) for liabilities to third persons for loss of or damage to property (other than property (A) owned, occupied, or used by Contractor or rented to Contractor, or (B) in the care, custody, or control of Contractor), or for death or bodily injury, not compensated by insurance or otherwise, arising out of the performance of this subcontract, whether or not caused by the negligence of Contractor, its agents, servants, or employees, provided such liabilities

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are represented by final judgments or by settlements approved in writing by the Government, and expenses incidental to such liabilities, except liabilities (I) for which Contractor is otherwise responsible under the express terms of the article or articles, if any, specified in said purchase order, or (II) with respect to which Contractor has failed to insure as required or maintain insurance as approved by the Contracting Officer, or (III) which results from willful misconduct or lack of good faith on the part of any of Contractor's directors or officers, or on the part of any of its managers, superintendents, or other equivalent representatives, who have supervision or direction of (1) all or substantially all of Contractor's business, or (2) all or substantially all of Contractor's operations at any one plant or separate location in which this subcontract is being performed, or (3) a separate and complete major industrial operation in connection with the performance of this subcontract. The foregoing shall not restrict the right of Contractor to be reimbursed for the cost of insurance maintained by Contractor in connection with the performance of this subcontract, other than insurance required to be submitted for approval or required to be procured and maintained pursuant to the provisions of this article, provided such cost would constitute "allowable cost" under Article 5 (ALLOWABLE COST AND FIXED FEE) hereof.

d. Contractor shall give the Government or its representatives and Lockheed immediate notice of any suit or action filed, or prompt notice of any claim made, against Contractor arising out of the performance of this subcontract, the cost and expense of which may be reimbursable to Contractor under the provisions of the subcontract, and the risk of which is then uninsured or which the amount claimed exceeds the amount of coverage. Contractor shall furnish immediately to the Government through Lockheed, copies of all pertinent papers received by Contractor. If the amount of liability claimed exceeds the amount of coverage, Contractor shall authorize representatives of Lockheed and the Government to collaborate with counsel for the insurance carrier, if any, in settling or defending such claim. If the liability is not insured or covered by bond, Contractor shall, if required by the Government or Lockheed, authorize representatives of the Government or Lockheed to settle or defend any such claim and to represent Contractor in or take charge of any litigation in connection therewith; provided, however, that Contractor may, at its own expense, be associated with representatives of Lockheed or the Government in the settlement or defense of any such claim or litigation."